UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

December 1, 2000

MEMORANDUM

SUBJECT: **DIAZINON. Revised HED Product and Residue Chemistry Chapter.** DP Barcode:D270422. PC Code: 057801. Case No. 0238.

FROM: Danette Drew, Chemist
Reregistration Branch 3
Health Effects Division (7509C)

THROUGH: Steve Knizner, Branch Senior Scientist
Reregistration Branch 3
Health Effects Division (7509C)

TO: Ben Chambliss, Special Review Manager
Special Review and Reregistration Division (7508C)

This memorandum contains the HED Product and Residue Chemistry Chapters for the diazinon RED. The previous revision of 4/12/2000 (D238958, C.Eiden, D.Hrdy) has been revised here to incorporate applicable comments received during the Phase 3 comment period.

Executive Summary

Product Chemistry

All pertinent generic data requirements are satisfied for the Novartis and Makhteshim "unstabilized" TGAIs, except that data pertaining to stability (OPPTS 830.6313) are outstanding for the Makhteshim TGAI and data concerning UV/visible absorption for the PAI (OPPTS 830.7050) are required for both TGAIs. All pertinent product-specific data requirements are satisfied for the Novartis 87% FI. Additional product-specific product chemistry data are required for the Prentiss 80%, 50%, 48.7%,

25%, and 10% FIs; the AgrEvo 10% and 5% FIs; and the Makhteshim 92% and 87% FIs. No product chemistry data have been submitted in support of reregistration of the Sureco 70.31%, 25%, and 12.5% FIs and the AgrEvo 25% FI. Data requirements for the repackaged Gowan and Drexel 87% FIs will be satisfied by data for the source products.

We note that CSFs for alternate formulations of the Sureco 70.31% FI, AgrEvo 25% FI, and Drexel 87% FI list canceled formulations as the source products.

Provided that the registrants submit the data required in the attached data summary tables for the unregistered "unstabilized" TGAIs and the registered MPs and either certify that the suppliers of beginning materials and the manufacturing processes for the diazinon TGAIs and MPs have not changed since the last comprehensive product chemistry review or submit complete updated product chemistry data packages, HED has no objections to the reregistration of diazinon with respect to product chemistry data requirements.

Residue Chemistry

Tolerances for diazinon residues in/on plant raw agricultural commodities (RACs) and in processed food and animal feed are currently expressed in terms of diazinon *per se* in [40 CFR §180.153 (a)]. Tolerances for Section 18 emergency exemptions are given in [40 CFR §180.153 (b)] and tolerances with regional registrations are given in [40 CFR §180.153(c)] Adequate methods are available for the enforcement of established tolerances, as currently defined.

The nature of the residue of diazinon in plants and animals is understood. The HED Metabolism Committee has determined that the residues of concern in plants and animals are diazinon, hydroxy diazinon, and diazoxon. For enforcement purposes, diazinon, *per se* will be included in the tolerance expression. However, residues of diazinon, and its metabolites, hydroxy diazinon and diazoxon, will be included in dietary risk assessment if they are found to be present or their concentration levels could be estimated for foods. Both of these metabolites are considered to be cholinesterase inhibitors. The chemical names and structures of the diazinon residues of concern are depicted in Figure A. Adequate analytical methodology is available for data collection and enforcing tolerances of diazinon pending radiovalidation of method with samples from metabolism studies. Diazoxon and hydroxy diazinon are also completely recovered with the available methodologies. Residue data for plant and animal commodities should include analyses for all three compounds.

Storage stability data are available indicating that diazinon and hydroxy diazinon are stable in/on frozen raw agricultural commodities (RACs) for up to 26 months. Diazoxon is not stable (< 3 months). The registrant is in the process of conducting storage stability studies on residue in processed commodities, meat, and milk. However, the registrant may wish to note that tolerances for residues of diazinon in livestock meat and meat byproducts, *excluding beef fat and the meat, fat, and meat byproducts of sheep,* are being recommended for revocation based on a determination that category

180.6(a)3 applies to these commodities, and that the establishment of a tolerance for milk is not warranted. Additional storage stability studies are being conducted on diazoxon and hydroxy diazinon in fresh produce.

For purposes of reregistration, requirements for magnitude of the residue in plants are fulfilled for the following crops: almonds (California use only), apples, beans (snap), brassica leafy vegetables, blackberries, boysenberries, carrots, cherries, corn (sweet), cranberries, figs, grapes, kiwi fruits (tolerance import only), mushrooms, nectarines, peaches, peas (succulent), peppers, plums, onions (dry bulb and green), pears, peppers (bell), pineapples, potatoes, radish/Chinese radish, squash, strawberries, tomatoes, turnips (roots and tops), walnuts (California use only), and watercress. Adequate field trial data depicting diazinon residues following applications made according to the maximum or proposed use patterns have been submitted for these crops. Geographical representation is adequate and a sufficient number of trials reflecting representative formulation classes were conducted.

IR-4 submitted data to support reassessed tolerances for figs (MRID 44726801) and watercress (MRID 44237101). The tolerance for figs has been reassessed based on the submitted residue data. The registrant can reinstate watercress on the labels or Hawaii can apply for a 24(c) Special Local Need (SLN) for watercress. IR-4 is supporting uses on filberts. They have generated residue field trial data; once these data have been submitted and reviewed, the tolerance for filberts can be reassessed.

Additional data are to be submitted on beans (lima), blueberries, celery, cucumbers, hops, peas (dried), spinach, sugar beets (roots and tops), and Swiss chard. Once residue data on these representative crops has been received and reviewed, sufficient data should be available to support tolerance reassessment for the crops listed above and the following crops: beet tops (garden), chicory, endive, melons, parsley, and squash. Alternatively, once the residue data for the above-listed crops has been submitted and reviewed, if any interested party wishes to support additional crop uses within a crop grouping, sufficient residue data should be available to support crop group tolerances.

The registrant is not supporting uses on the following crops for which tolerances are established: alfalfa, bananas, citrus fruits, clover, coffee, cottonseed, grasses, olives, peanuts, pecans, sorghum, soybeans, or sugarcane. The Agency is proposing to revoke tolerances for beans, guar, cowpeas, olives, peanuts, pecans, soybeans, and sugarcane. Once it has been determined that no other interested party wishes to support the remaining uses for alfalfa, bananas, citrus fruits, clover, coffee, cottonseed, and grasses these tolerances should be revoked as well.

The reregistration requirements for magnitude of the residue in processed food/feed commodities are fulfilled for apple, figs, grapes, pineapples, plums, potatoes, and tomatoes. Residues of diazinon did not concentrate in plant processed commodities except for dried figs and dried sugar beet pulp. A

tolerance has been established on figs and will be determined for sugar beet pulp pending receipt and review additional residue data on sugar beets.

A 40 CFR §180.6(a)(3) condition exists, and tolerances for poultry, egg, and cattle meat and meat byproducts are recommended for revocation, and a milk tolerance is not required. Existing tolerances of 0.7 ppm in sheep tissues (meat and meat byproducts) are adequate. However, the existing tolerance for diazinon in sheep, fat should be raised from 0.7 ppm to 5.0 ppm.. The existing tolerance for cattle (beef) fat should be decreased from 0.7 ppm to 0.5 ppm. The tolerance for cattle meat and meat by-products (mbyp) can be revoked as there is "no reasonable expectation of finite residues" {Category 180.6(a)3} on cattle meat and mbyp from registered uses of cattle ear tags or from the consumption of diazinon treated feed items by cattle. A diazinon tolerance for milk is not required as long as the ear tag labels maintain that use is for beef cattle and *non-lactating* dairy cattle, only.

A food/feed handling establishment use exists and tolerances of 0.02 ppm recommended; however, based on data submitted to support the food additive petition and associated label restrictions on commercial applicators applying diazinon in food/feed handling establishments, there is no likelihood of residues on food/feed provided label directions are followed.

An adequate confined rotational crop study is available. These data indicate that residues of diazinon in rotational crops are qualitatively similar to the residues resulting from the direct application of diazinon to the primary crops. Based on the results of this study, limited field rotational crop studies are required. The registrant has agreed to conduct limited crop rotational studies on three representative crops.

Dietary Exposure Assessment

HED notes that the following raw agricultural commodities were excluded from the current dietary risk assessments: olives, peanuts, pecans, soybeans, sugarcane, beans, guar, and cowpeas. The registrant voluntarily canceled these uses on December 27, 1996. The Agency is proposing to revoke these tolerances (to be effective January 2000). Because secondary residues from milk, eggs, poultry, meat ,fat, and meat byproducts, except for those of sheep and cattle, are not expected, these commodities have been excluded from the dietary analysis. However, secondary residues of diazinon from sheep commodities based on the sheep spray use were included, as were secondary residues in cattle fat as a result of cattle ear tag use. IR-4 has expressed interest in supporting uses on figs, watercress, filberts, and the registrant (Novartis) supports an import use on kiwi fruits, and has provided the necessary residue data. These four commodities were included in the dietary risk assessment. Also included in the dietary assessments because they have tolerances were: bananas, citrus, coffee, cottonseed meal and oil, dandelion, and sorghum. The HED Residue Chemistry chapter recommends for revocation of these tolerances because the registrant no longer wishes to support these uses. SRRD has requested that these commodities be included in the dietary assessment until it has been determined that no other interested parties wish to support these uses. Once USDA, IR-4, growers groups, and others have

had the opportunity to review the document, a decision can be made regarding the tolerances listed for revocation.

For the purposes of the dietary exposure and risk assessment for diazinon, the metabolites diazoxon, and hydroxy diazinon will be included in the dietary risk assessment when dtermined to be present in plant or animal commodities. A previous dietary risk assessment for acute exposures to diazinon was based on an acute Population Adjusted Dose (PAD) of 0.0025 mg/kg/day, tolerance level residues and assumed that 100% of a crop included in the assessment was treated (B. Steinwand, 4/24/98, D245094). This was a highly conservative analysis, but did not include residues from diazoxon or hydroxy diazinon. The previous dietary risk assessment for chronic exposures to diazinon was based on a chronic Population Adjusted Dose (PAD) of 0.0007 mg/kg/day, anticipated residues which included percentage of crop that was treated (B. Steinwand, 4/24/98, D245094). The chronic analysis was a more refined analysis, however it did include residues for cattle meat, meat byproducts, and milk, which have been recommended for revocation upon tolerance reassessment. However, the analysis did not include residues from diazoxon or hydroxy diazinon

The most recent dietary assessment (D269781, 11/14/00, D. Drew), using the revised chronic PAD of 0.0002 mg/kg/day, incorporated more refined residue data, such as monitoring (PDP and FDA) data, field trial data, and percent crop/cattle treated estimates. The cattle fat and the fat, meat and mbyp of sheep were included and cattle meat and mbyp, and milk were excluded. The preponderance of residue data from metabolism studies, residue field trials, and monitoring data indicate that diazoxon and hydroxy diazinon are infrequently to never detected for the majority of commodities analyzed for these metabolites. As a result, the residues of the two metabolites were assumed to be zero in the dietary assessment unless residues were reported for a given commodity sample.

cc: D.Drew (RRB3), RF, List A file, B. Chambliss (SRRD)
RDI: S. Knizner 12/1/00

DIAZINON

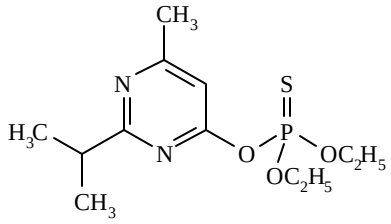
REREGISTRATION ELIGIBILITY DECISION:

PRODUCT CHEMISTRY CONSIDERATIONS

PC CODE 057801; Case No. 0238

DESCRIPTION OF CHEMICAL

Diazinon [O,O-diethyl-O-(2-isopropyl-6-methy-4-pyrimidinyl)phosphorothioate] is a nonsystemic insecticide used for the control of soil insects and pests of fruits, vegetables, tobacco, forage, field crops, range, pasture, grasslands, and ornamentals. Diazinon is also used for control of household insects, and grubs in turf, seed treatments, and fly control, and as a dermal treatment for livestock.



Empirical Formula:	$C_{12}H_{21}N_2O_3PS$
Molecular Weight:	304.3
CAS Registry No.:	333-41-5
PC Code:	057801

IDENTIFICATION OF ACTIVE INGREDIENT

Pure diazinon is a colorless oil which is formulated into "stabilized" technical diazinon. Technical diazinon ($90% pure) is an amber to brown liquid with a boiling point of 83-84°C. Technical diazinon is practically insoluble in water (40 ppm at 20° C) but is completely miscible in acetone, benzene, dichloromethane, ethanol, 1-octanol, toluene, and xylene, and is soluble in petroleum oils.

MANUFACTURING-USE PRODUCTS

A search of the Reference Files System (REFS) conducted 5/15/97 identified 21 diazinon manufacturing-use products (MPs) registered under Shaughnessy No. 057801. The registered diazinon MPs are listed in Table 1 and are the only products subject to a reregistration eligibility decision. We note that several products are manufactured from an unregistered "unstabilized" TGAI; data are required for the TGAI for the reregistration of diazinon.

Table 1. Registered Diazinon Manufacturing-Use Products.

Formulation	EPA Reg. No.	Registrant
87% FI	100-524	Novartis Crop Protection, Incorporated (formerly Ciba-Geigy Corp.)
56% FI	100-783	
22.4% FI	100-771	
5% FI	100-714	
80% FI	655-473	Prentiss, Incorporated
50% FI	655-463	
48.7% FI	655-500	
25% MAI FI [1]	655-595	
10% MAI FI [1]	655-401	
70.31% MAI FI [2,3]	769-695	Sureco, Incorporated
25% FI [4]	769-693	
12.5% MAI FI [2,5]	769-691	
25% MAI FI [1]	4816-685	AgrEvo Environmental Health (formerly Fairfield American Corp.)
10% MAI FI [1]	4816-640	
5% MAI FI [1]	4816-245	
5% MAI FI [1]	4816-621	
87% FI [6,7]	10163-212	Gowan Company
92% FI [6]	11678-6	Makhteshim Chemical Works Limited
87% FI [6]	11678-20	
87% FI [6,7]	19713-104	Drexel Chemical Company

1 Formulated with piperonyl butoxide and pyrethrins.
2 Formulated with aliphatic or aromatic solvents.
3 Transferred from Southern Mill Creek Products Company (EPA Reg. No. 6720-201; 12/18/92).
4 Transferred from Southern Mill Creek Products Company (EPA Reg. No. 6720-199; 12/18/92).
5 Transferred from Southern Mill Creek Products Company (EPA Reg. No. 6720-197; 12/18/92).

[6] REFS currently identifies this product as a technical; however, it is correctly identified as an FI.
[7] Repackaged from EPA-registered products.

REGULATORY BACKGROUND

Diazinon was the subject of a Reregistration Standard dated 7/15/86 which stated that generic and product-specific product chemistry data for all MPs must be resubmitted in support of the reregistration of diazinon. An Addendum #1 to the Product Chemistry Chapter was issued 8/22/86 which required preliminary analysis of all Ts (technicals) and FIs (formula intermediaries) for tetraethylpyrophosphate (TEPP) or sulfur derivatives of TEPP, upper certified limits for TEPP and sulfur derivatives of TEPP, and quantitative enforcement analytical methods with supporting validation data for products in which these impurities were identified. The Diazinon Reregistration Standard-Update #1 dated 3/24/88 reiterated the requirements specified in the Reregistration Standard and noted that because the "unstabilized" TGAI was stabilized for registration, the registered MPs would be classified as FIs. A Guidance Document was issued 12/88. Data submitted in response to the Update #1 and the Guidance Document were reviewed and summarized in the Diazinon Reregistration Standard Update dated 1/24/92. We note that the Novartis 56% and 22.4% FIs and the Gowan 87% FI were registered subsequent to issuance of the Update (3/18/96, 9/14/95, and 9/29/94, respectively).

The current status of the product chemistry data requirements for the diazinon products is presented in the attached data summary tables. Refer to these tables for a listing of the outstanding product chemistry data requirements.

CONCLUSIONS

All pertinent generic data requirements are satisfied for the Novartis and Makhteshim "unstabilized" TGAIs, except that data pertaining to stability (OPPTS 830.6313) are outstanding for the Makhteshim TGAI and data concerning UV/visible absorption for the PAI (OPPTS 830.7050) are required for both TGAIs. All pertinent product-specific data requirements are satisfied for the Novartis 87% FI. Additional product-specific product chemistry data are required for the Prentiss 80%, 50%, 48.7%, 25%, and 10% FIs; the AgrEvo 10% and 5% FIs; and the Makhteshim 92% and 87% FIs. No product chemistry data have been submitted in support of reregistration of the Sureco 70.31%, 25%, and 12.5% FIs and the AgrEvo 25% FI. Data requirements for the repackaged Gowan and Drexel 87% FIs will be satisfied by data for the source products.

We note that CSFs for alternate formulations of the Sureco 70.31% FI, AgrEvo 25% FI, and Drexel 87% FI list canceled formulations as the source products.

Provided that the registrants submit the data required in the attached data summary tables for the unregistered "unstabilized" TGAIs and the registered MPs and either certify that the suppliers of beginning materials and the manufacturing processes for the diazinon TGAIs and MPs have not

changed since the last comprehensive product chemistry review or submit complete updated product chemistry data packages, CBRS has no objections to the reregistration of diazinon with respect to product chemistry data requirements.

AGENCY MEMORANDA CITED IN THIS DOCUMENT

CBRS No(s).:	4083-4085
Subject:	Diazinon - EPA Registration Nos. 100-577 and 100-524 - Ciba-Geigy's Response to the Product Chemistry Chapter - Data Call-In Notice dated May 1, 1987.
From:	G. Makhijani
To:	G. LaRocca/D. Pilitt and A. Rispin
Dated:	8/25/88
MRID(s):	40406501-40406509

CBRS No(s).:	4325 and 4326
Subject:	EPA Registration Nos. 100-577 and 100-524 - Ciba-Geigy's Response to the Product Chemistry Chapter - Data Call-In Notice dated May 1, 1987.
From:	G. Makhijani
To:	G. LaRocca/D. Pilitt and R. Engler
Dated:	10/3/88
MRID(s):	40782601 and 40782602

CBRS No(s).:	4610-4612
Subject:	Diazinon - EPA Registration Nos. 100-577 and 100-524 - Ciba-Geigy's Response to the Product Chemistry Chapter Data Call-In Notice dated May 1, 1987.
From:	G. Makhijani
To:	G. LaRocca/D. Pilitt and R. Engler
Dated:	12/16/88
MRID(s):	None

CBRS No(s).:	4785
Subject:	Diazinon MG-2 Manufacturing-Use Product - EPA Registration No. 100-652 - Ciba-Geigy's Response to the Product Chemistry Chapter Data Call-In Notice Dated May 1, 1987.
From:	G. Makhijani
To:	G. LaRocca/D. Pilitt and R. Engler

Dated: 2/4/89
MRID(s): 40911501-40911503

CBRS No(s).: 5453
Subject: Diazinon MG-2. Manufacturing-Use Product EPA Registration No. 100-652 - Ciba-Geigy's Response to the Product Chemistry Chapter. Data Call-In Notice Dated May 1, 1987.
From: G. Makhijani
To: G. LaRocca/D. Pilitt and R. Engler
Dated: 7/27/89
MRID(s): 41115701

CBRS No(s).: 4086 and 4087
Subject: Diazinon - EPA Registration Nos. 11678-6 and 11678-20 - Makhteshim Agan (America), Inc. Response to the Products Chapter, Data Call-In Notice Dated May 1, 1987.
From: G. Makhijani
To: G. LaRocca/D. Pilitt and A. Rispin
Dated: 9/7/89
MRID(s): 40423401-40423403 and 40423501-40423503

CBRS No(s).: 6008
Subject: Diazinon: EPA Registration Nos. 11678-6 and 11678-20 - Makhteshim Agan (America), Inc. Response to the Product Chemistry Chapter, Data Call-In Notice Dated May 1, 1987.
From: G. Makhijani
To: G. LaRocca/D. Pilit
Dated: 12/12/89
MRID(s): 41249901, 41249902, and 41278901

PRODUCT CHEMISTRY CITATIONS

Bibliographic citations include only MRIDs containing data which fulfill data requirements.

References (cited):

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41757103 Fairfield American Corp. (1991) Pyrenone Diazinon Aqueous Base: Storage Stability Testing. Unpublished study. 6 p.

41757104 Fairfield American Corp. (1991) Pyrenone Diazinon W. B.: Storage Stability Testing. Unpublished study. 6 p.

Case No. 0238
Chemical No. 057801

Case Name: Diazinon
Registrant: Novartis Crop Protection, Incorporated
Product(s): Unregistered "unstabilized" TGAI

PRODUCT CHEMISTRY DATA SUMMARY

Guideline Number	Requirement	Are Data Requirements Fulfilled? [1]	MRID Number [2]
830.1550	Product Identity and Disclosure of Ingredients	N/A [3]	
830.1600 830.1620 830.1650	Starting Materials and Manufacturing Process	Y	40406501
830.1670	Discussion of Formation of Impurities	Y	40406501
830.1700	Preliminary Analysis	Y	40406502
830.1750	Certification of Ingredient Limits	N/A [3]	
830.1800	Analytical Methods to Verify the Certified Limits	N/A [3]	
830.6302	Color	Y	40406503
830.6303	Physical State	Y	40406503
830.6304	Odor	Y	40406503
830.6313	Stability	Y	40406503
830.6314	Oxidation/Reduction	N/A [3]	
830.6315	Flammability	N/A [3]	
830.6316	Explodability	N/A [3]	
830.6317	Storage Stability	N/A [3]	
830.6319	Miscibility	N/A [3]	
830.6320	Corrosion Characteristics	N/A [3]	
830.7000	pH	Y	40406503
830.7050	UV/Visible Absorption	N [4]	
830.7100	Viscosity	N/A [3]	
830.7200	Melting Point/Melting Range	N/A [5]	
830.7220	Boiling Point/Boiling Range	Y	40406503
830.7300	Density/Relative Density/Bulk Density	Y	40406503
830.7370	Dissociation Constant in Water	Y	40406503
830.7550 830.7560 830.7570	Partition Coefficient (Octanol/Water)	Y	40406503
830.7840 830.7860	Solubility	Y	40406503
830.7950	Vapor Pressure	Y	40406503

[1] Y = Yes; N = No; N/A = Not Applicable.

[2] All references were reviewed under CBRS Nos. 4083-4085, 8/25/88, G. Makhijani.

[3] Data are not required for the TGAI.

[4] The OPPTS Series 830, Product Properties Test Guidelines require data pertaining to UV/visible absorption for the PAI.

[5] Data are not required because the TGAI is a liquid at room temperature.

Case No. 0238
Chemical No. 057801

Case Name: Diazinon
Registrant: Novartis Crop Protection, Incorporated
Product(s): 87% FI (EPA Reg. No. 100-524)

PRODUCT CHEMISTRY DATA SUMMARY

Guideline Number	Requirement	Are Data Requirements Fulfilled? [1]	MRID Number [2]
830.1550	Product Identity and Disclosure of Ingredients	Y	40406507
830.1600 830.1620 830.1650	Starting Materials and Manufacturing Process	Y	40406507
830.1670	Discussion of Formation of Impurities	Y	40406507
830.1700	Preliminary Analysis	Y	40406508
830.1750	Certification of Ingredient Limits	Y	40406508, CSF [3]
830.1800	Analytical Methods to Verify the Certified Limits	Y	40406508
830.6302	Color	Y	40406509
830.6303	Physical State	Y	40406509
830.6304	Odor	Y	40406509
830.6313	Stability	N/A [4]	
830.6314	Oxidation/Reduction	Y	40406509
830.6315	Flammability	Y	40406509
830.6316	Explodability	Y	40406509
830.6317	Storage Stability	Y	40406509, 40782602 [5]
830.6319	Miscibility	Y	40406509
830.6320	Corrosion Characteristics	Y	40406509
830.7000	pH	Y	40406509
830.7050	UV/Visible Absorption	N/A [4]	
830.7100	Viscosity	Y	40406509
830.7200	Melting Point/Melting Range	N/A [4]	
830.7220	Boiling Point/Boiling Range	N/A [4]	
830.7300	Density/Relative Density/Bulk Density	Y	40406509
830.7370	Dissociation Constant in Water	N/A [4]	
830.7550 830.7560 830.7570	Partition Coefficient (Octanol/Water)	N/A [4]	
830.7840 830.7860	Solubility	N/A [4]	
830.7950	Vapor Pressure	N/A [4]	

[1] Y = Yes; N = No; N/A = Not Applicable. Manufactured from the unregistered "unstabilized" TGAI.

[2] References were reviewed under CBRS Nos. 4083-4085, 8/25/88, G. Makhijani unless otherwise noted.

[3] CBRS Nos. 4610-4612, 12/16/88, G. Makhijani.
[4] Data requirements will be satisfied by data requiremants for the active ingredient source product.

Case No. 0238
Chemical No. 057801

Case Name: Diazinon
Registrant: Novartis Crop Protection, Incorporated
Product(s): 56%, 22.4%, and 5% FIs (EPA Reg. Nos. 100-783, 100-771, and 100-714, respectively)

PRODUCT CHEMISTRY DATA SUMMARY

Guideline Number	Requirement	Are Data Requirements Fulfilled? [1]	MRID Number
830.1550	Product Identity and Disclosure of Ingredients	N	
830.1600 830.1620 830.1650	Starting Materials and Manufacturing Process	N	
830.1670	Discussion of Formation of Impurities	N	
830.1700	Preliminary Analysis	N [2]	
830.1750	Certification of Ingredient Limits	N	
830.1800	Analytical Methods to Verify the Certified Limits	N	
830.6302	Color	N	
830.6303	Physical State	N	
830.6304	Odor	N	
830.6313	Stability	N/A [3]	
830.6314	Oxidation/Reduction	N	
830.6315	Flammability	N	
830.6316	Explodability	N	
830.6317	Storage Stability	N	
830.6319	Miscibility	N	
830.6320	Corrosion Characteristics	N	
830.7000	pH	N	
830.7050	UV/Visible Absorption	N/A [3]	
830.7100	Viscosity	N	
830.7200	Melting Point/Melting Range	N/A [3]	
830.7220	Boiling Point/Boiling Range	N/A [3]	
830.7300	Density/Relative Density/Bulk Density	N	
830.7370	Dissociation Constant in Water	N/A [3]	
830.7550 830.7560 830.7570	Partition Coefficient (Octanol/Water)	N/A [3]	
830.7840 830.7860	Solubility	N/A [3]	
830.7950	Vapor Pressure	N/A [3]	

[1] Y = Yes; N = No; N/A = Not Applicable. No product chemistry data have been submitted in support of reregistration of these products.

[2] Data pertaining to the identification and quantification of TEPP and the sulfur derivatives of TEPP must be submitted.

[3] Data requirements will be satisfied by data for the active ingredient source product(s).

Case No. 0238
Chemical No. 057801

Case Name: Diazinon
Registrant: Prentiss Incorporated
Product(s): 80% FI (EPA Reg. No. 655-473)

PRODUCT CHEMISTRY DATA SUMMARY

Guideline Number	Requirement	Are Data Requirements Fulfilled? [1]	MRID Number [2]
830.1550	Product Identity and Disclosure of Ingredients	N [3]	40488602
830.1600 830.1620 830.1650	Starting Materials and Manufacturing Process	N [4]	40488602
830.1670	Discussion of Formation of Impurities	Y	40488602
830.1700	Preliminary Analysis	N [5]	40488602
830.1750	Certification of Ingredient Limits	N [6]	40488602
830.1800	Analytical Methods to Verify the Certified Limits	N [7]	40488602
830.6302	Color	Y	40488602
830.6303	Physical State	Y	40488602
830.6304	Odor	Y	40488602
830.6313	Stability	N/A [8]	
830.6314	Oxidation/Reduction	N [9]	40488602
830.6315	Flammability	N [9]	40488602
830.6316	Explodability	N [9]	40488602
830.6317	Storage Stability	N [10]	40488602, 40783801
830.6319	Miscibility	N/A [11]	40488602
830.6320	Corrosion Characteristics	N [10]	40488602
830.7000	pH	N/A [12]	40488602
830.7050	UV/Visible Absorption	N/A [8]	
830.7100	Viscosity	N [9]	40488602
830.7200	Melting Point/Melting Range	N/A [8]	
830.7220	Boiling Point/Boiling Range	N/A [8]	
830.7300	Density/Relative Density/Bulk Density	N [13]	40488602
830.7370	Dissociation Constant in Water	N/A [8]	
830.7550 830.7560 830.7570	Partition Coefficient (Octanol/Water)	N/A [8]	
830.7840 830.7860	Solubility	N/A [8]	
830.7950	Vapor Pressure	N/A [8]	

[1] Y = Yes; N = No; N/A = Not Applicable. Manufactured from an EPA-registered product.

[2] All references were reviewed in the Diazinon Reregistration Standard Update dated 1/24/92.

[3] The nominal concentration, purpose, and chemical name must be submitted for the active ingredient and each inert ingredient.

[4] The names and addresses of the suppliers and technical specifications of the inert ingredients are required.

[5] Data pertaining to the identification and quantification of TEPP and the sulfur derivatives of TEPP must be submitted.

[6] The proposed certified limits must be based on the nominal concentration (label claim) of the active ingredient source product, and certifications must be submitted on EPA Form 8570-4.

[7] A description and supporting validation data must be submitted for the analytical methods used to determine the active ingredient.

[8]Data requirements will be satisfied by data for the active ingredient source product.

[9] The methods by which the data were obtained are required.

[10] The raw data, testing conditions, and methods used must be provided to support the submitted statement.

[11] Data are not required because the MP is not an emulsifiable liquid.

[12] Data are not required because the MP is not dispersible in water.

[13] Data concerning the specific gravity and the method used to obtain these data are required.

Case No. 0238
Chemical No. 057801

Case Name: Diazinon
Registrant: Prentiss Incorporated
Product(s): 50% FI (EPA Reg. No. 655-463)

PRODUCT CHEMISTRY DATA SUMMARY

Guideline Number	Requirement	Are Data Requirements Fulfilled? [1]	MRID Number [2]
830.1550	Product Identity and Disclosure of Ingredients	N [3]	40488606
830.1600 830.1620 830.1650	Starting Materials and Manufacturing Process	N [4]	40488606
830.1670	Discussion of Formation of Impurities	Y	40488606
830.1700	Preliminary Analysis	N [5]	40488606
830.1750	Certification of Ingredient Limits	N [6]	40488606
830.1800	Analytical Methods to Verify the Certified Limits	N [7]	40488606
830.6302	Color	Y	40488606
830.6303	Physical State	Y	40488606
830.6304	Odor	Y	40488606
830.6313	Stability	N/A [8]	
830.6314	Oxidation/Reduction	N [9]	40488606
830.6315	Flammability	N/A [10]	40488606
830.6316	Explodability	N [9]	40488606
830.6317	Storage Stability	N [11]	40488606, 40783901
830.6319	Miscibility	N/A [10]	40488606
830.6320	Corrosion Characteristics	N [11]	40488606
830.7000	pH	N [9]	40488606
830.7050	UV/Visible Absorption	N/A [8]	
830.7100	Viscosity	N/A [10]	40488606
830.7200	Melting Point/Melting Range	N/A [8]	
830.7220	Boiling Point/Boiling Range	N/A [8]	
830.7300	Density/Relative Density/Bulk Density	N [9]	40488606
830.7370	Dissociation Constant in Water	N/A [8]	
830.7550 830.7560 830.7570	Partition Coefficient (Octanol/Water)	N/A [8]	
830.7840 830.7860	Solubility	N/A [8]	
830.7950	Vapor Pressure	N/A [8]	

[1] Y = Yes; N = No; N/A = Not Applicable. Manufactured from an EPA-registered product.

[2] All references were reviewed in the Diazinon Reregistration Standard Update dated 1/24/92.

[3] The nominal concentration, purpose, and chemical name must be submitted for the active ingredient and each inert ingredient.

[4] The names and addresses of the suppliers and technical specifications of the inert ingredients are required.

[5] Data pertaining to the identification and quantification of TEPP and the sulfur derivatives of TEPP must be submitted.

[6] The proposed certified limits must be based on the nominal concentration (label claim) of the active ingredient source product, and certifications must be submitted on EPA Form 8570-4.

[7] A description and supporting validation data must be submitted for the analytical methods used to determine the active ingredient.

[8] Data requirements will be satisfied by data for the active ingredient source product.

[9] The methods by which the data were obtained are required.

[10] Data are not required because the MP is a solid at room temperature.

[11] The raw data, testing conditions, and methods used must be provided to support the submitted statement.

Case No. 0238
Chemical No. 057801

Case Name: Diazinon
Registrant: Prentiss Incorporated
Product(s): 48.7% FI (EPA Reg. No. 655-500)

PRODUCT CHEMISTRY DATA SUMMARY

Guideline Number	Requirement	Are Data Requirements Fulfilled? [1]	MRID Number [2]
830.1550	Product Identity and Disclosure of Ingredients	N [3]	40488603
830.1600 830.1620 830.1650	Starting Materials and Manufacturing Process	N [4]	40488603
830.1670	Discussion of Formation of Impurities	Y	40488603
830.1700	Preliminary Analysis	N [5]	40488603
830.1750	Certification of Ingredient Limits	N [6]	40488603
830.1800	Analytical Methods to Verify the Certified Limits	N [7]	40488603
830.6302	Color	Y	40488603
830.6303	Physical State	Y	40488603
830.6304	Odor	Y	40488603
830.6313	Stability	N/A [8]	
830.6314	Oxidation/Reduction	N [9]	40488603
830.6315	Flammability	N [9]	40488603
830.6316	Explodability	N [9]	40488603
830.6317	Storage Stability	N [10]	40488603, 40783701
830.6319	Miscibility	N/A [11]	40488603
830.6320	Corrosion Characteristics	N [10]	40488603
830.7000	pH	N/A [12]	40488603
830.7050	UV/Visible Absorption	N/A [8]	
830.7100	Viscosity	N [9]	40488603
830.7200	Melting Point/Melting Range	N/A [8]	
830.7220	Boiling Point/Boiling Range	N/A [8]	
830.7300	Density/Relative Density/Bulk Density	N [13]	40488603
830.7370	Dissociation Constant in Water	N/A [8]	
830.7550 830.7560 830.7570	Partition Coefficient (Octanol/Water)	N/A [8]	
830.7840 830.7860	Solubility	N/A [8]	
830.7950	Vapor Pressure	N/A [8]	

[1] Y = Yes; N = No; N/A = Not Applicable. Manufactured from an EPA-registered product.

[2] All references were reviewed in the Diazinon Reregistration Standard Update dated 1/24/92.

[3] The nominal concentration, purpose, and chemical name must be submitted for the active ingredient and each inert ingredient.

[4] The names and addresses of the suppliers and technical specifications of the inert ingredients are required.

[5] Data pertaining to the identification and quantification of TEPP and the sulfur derivatives of TEPP must be submitted.

[6] The proposed certified limits must be based on the nominal concentration (label claim) of the active ingredient source product, and certifications must be submitted on EPA Form 8570-4.

[7] A description and supporting validation data must be submitted for the analytical methods used to determine the active ingredient.

[8] Data requirements will be satisfied by data for the active ingredient source product.

[9] The methods by which the data were obtained are required.

[10] The raw data, testing conditions, and methods used must be provided to support the submitted statement.

[11] Data are not required because the MP is not an emulsifiable liquid.

[12] Data are not required because the MP is not dispersible in water.

[13] Data concerning the specific gravity and the method used to obtain these data are required.

Case No. 0238
Chemical No. 057801

Case Name: Diazinon
Registrant: Prentiss Incorporated
Product(s): 25% MAI FI (EPA Reg. No. 655-595)

PRODUCT CHEMISTRY DATA SUMMARY

Guideline Number	Requirement	Are Data Requirements Fulfilled? [1]	MRID Number [2]
830.1550	Product Identity and Disclosure of Ingredients	N [3]	40488604
830.1600 830.1620 830.1650	Starting Materials and Manufacturing Process	N [4]	40488604
830.1670	Discussion of Formation of Impurities	Y	40488604
830.1700	Preliminary Analysis	N [5]	40488604
830.1750	Certification of Ingredient Limits	N [6]	40488604
830.1800	Analytical Methods to Verify the Certified Limits	N [7]	40488604
830.6302	Color	Y	40488604
830.6303	Physical State	Y	40488604
830.6304	Odor	Y	40488604
830.6313	Stability	N/A [8]	
830.6314	Oxidation/Reduction	N [9]	40488604
830.6315	Flammability	N [9]	40488604
830.6316	Explodability	N [9]	40488604
830.6317	Storage Stability	N [10]	40488604, 40783601
830.6319	Miscibility	N/A [11]	40488604
830.6320	Corrosion Characteristics	N [10]	40488604
830.7000	pH	N/A [12]	40488604
830.7050	UV/Visible Absorption	N/A [8]	
830.7100	Viscosity	N [9]	40488604
830.7200	Melting Point/Melting Range	N/A [8]	
830.7220	Boiling Point/Boiling Range	N/A [8]	
830.7300	Density/Relative Density/Bulk Density	N [13]	40488604
830.7370	Dissociation Constant in Water	N/A [8]	
830.7550 830.7560 830.7570	Partition Coefficient (Octanol/Water)	N/A [8]	
830.7840 830.7860	Solubility	N/A [8]	
830.7950	Vapor Pressure	N/A [8]	

[1] Y = Yes; N = No; N/A = Not Applicable. Manufactured from an EPA-registered product.

[2] All references were reviewed in the Diazinon Reregistration Standard Update dated 1/24/92.

[3] The nominal concentration, purpose, and chemical name must be submitted for the active ingredient and each inert ingredient, and the registration numbers must be submitted for the pyrethrum extract and piperonyl butoxide source products.

[4] The EPA Reg. Nos. must be submitted for the pyrethrum extract and piperonyl butoxide source products, and the names and addresses of the suppliers and technical specifications of the pyrethrum extract and piperonyl butoxide products and inert ingredients are required.

[5] Data pertaining to the identification and quantification of TEPP and the sulfur derivatives of TEPP must be submitted.

[6] The proposed certified limits must be based on the nominal concentration (label claim) of the active ingredient source products, and certifications must be submitted on EPA Form 8570-4.

[7] A description and supporting validation data must be submitted for the analytical methods used to determine the active ingredients.

[8] Data requirements will be satisfied by data for the active ingredient source product.

[9] The methods by which the data were obtained are required.

[10] The raw data, testing conditions, and methods used must be provided to support the submitted statement.

[11] Data are not required because the MP is not an emulsifiable liquid.

[12] Data are not required because the MP is not dispersible in water.

[13] Data concerning the specific gravity and the method used to obtain these data are required.

Case No. 0238
Chemical No. 057801

Case Name: Diazinon
Registrant: Prentiss Incorporated
Product(s): 10% MAI FI (EPA Reg. No. 655-401)

PRODUCT CHEMISTRY DATA SUMMARY

Guideline Number	Requirement	Are Data Requirements Fulfilled? [1]	MRID Number [2]
830.1550	Product Identity and Disclosure of Ingredients	N [3]	40488601
830.1600 830.1620 830.1650	Starting Materials and Manufacturing Process	N [4]	40488601
830.1670	Discussion of Formation of Impurities	Y	40488601
830.1700	Preliminary Analysis	N [5]	40488601
830.1750	Certification of Ingredient Limits	N [6]	40488601
830.1800	Analytical Methods to Verify the Certified Limits	N [7]	40488601
830.6302	Color	Y	40488601
830.6303	Physical State	Y	40488601
830.6304	Odor	Y	40488601
830.6313	Stability	N/A [8]	
830.6314	Oxidation/Reduction	N [9]	40488601
830.6315	Flammability	N [9]	40488601
830.6316	Explodability	N [9]	40488601
830.6317	Storage Stability	N [10]	40488601, 40784001
830.6319	Miscibility	N/A [11]	40488601
830.6320	Corrosion Characteristics	N [10]	40488601
830.7000	pH	N/A [12]	40488601
830.7050	UV/Visible Absorption	N/A [8]	
830.7100	Viscosity	N [9]	40488601
830.7200	Melting Point/Melting Range	N/A [8]	
830.7220	Boiling Point/Boiling Range	N/A [8]	
830.7300	Density/Relative Density/Bulk Density	N [13]	40488601
830.7370	Dissociation Constant in Water	N/A [8]	
830.7550 830.7560 830.7570	Partition Coefficient (Octanol/Water)	N/A [8]	
830.7840 830.7860	Solubility	N/A [8]	
830.7950	Vapor Pressure	N/A [8]	

[1] Y = Yes; N = No; N/A = Not Applicable. Manufactured from an EPA-registered product.

[2] All references were reviewed in the Diazinon Reregistration Standard Update dated 1/24/92.

[3] The nominal concentration, purpose, and chemical name must be submitted for the active ingredient and each inert ingredient, and the registration numbers must be submitted for the pyrethrum extract and piperonyl butoxide source products.

[4] The EPA Reg. Nos. must be submitted for the pyrethrum extract and piperonyl butoxide source products, and the name and address of the suppliers and technical specifications of the pyrethrum extract and piperonyl butoxide products and inert ingredients are required.

[5] Data pertaining to the identification and quantification of TEPP and the sulfur derivatives of TEPP must be submitted.

[6] The proposed certified limits must be based on the nominal concentration (label claim) of the active ingredient source products, and certifications must be submitted on EPA Form 8570-4.

[7] A description and supporting validation data must be submitted for the analytical methods used to determine the active ingredients.

[8] Data requirements will be satisfied by data for the active ingredient source product.

[9] The methods by which the data were obtained are required.

[10] The raw data, testing conditions, and methods used must be provided to support the submitted statement.

[11] Data are not required because the MP is not an emulsifiable liquid.

[12] Data are not required because the MP is not dispersible in water.

[13] Data concerning the specific gravity and the method used to obtain these data are required.

Case No. 0238
Chemical No. 057801

Case Name: Diazinon
Registrant: Sureco, Incorporated
Product(s): 70.31% MAI FI (basic and alternate formulations), 25% FI, and 12.5% MAI FI (EPA Reg. Nos. 769-695, 769-693, and 769-691, respectively)

PRODUCT CHEMISTRY DATA SUMMARY

Guideline Number	Requirement	Are Data Requirements Fulfilled? [1]	MRID Number
830.1550	Product Identity and Disclosure of Ingredients	N	
830.1600 830.1620 830.1650	Starting Materials and Manufacturing Process	N	
830.1670	Discussion of Formation of Impurities	N	
830.1700	Preliminary Analysis	N [2]	
830.1750	Certification of Ingredient Limits	N	
830.1800	Analytical Methods to Verify the Certified Limits	N	
830.6302	Color	N	
830.6303	Physical State	N	
830.6304	Odor	N	
830.6313	Stability	N/A [3]	
830.6314	Oxidation/Reduction	N	
830.6315	Flammability	N	
830.6316	Explodability	N	
830.6317	Storage Stability	N	
830.6319	Miscibility	N	
830.6320	Corrosion Characteristics	N	
830.7000	pH	N	
830.7050	UV/Visible Absorption	N/A [3]	
830.7100	Viscosity	N	
830.7200	Melting Point/Melting Range	N/A [3]	
830.7220	Boiling Point/Boiling Range	N/A [3]	
830.7300	Density/Relative Density/Bulk Density	N	
830.7370	Dissociation Constant in Water	N/A [3]	
830.7550 830.7560 830.7570	Partition Coefficient (Octanol/Water)	N/A [3]	
830.7840 830.7860	Solubility	N/A [3]	
830.7950	Vapor Pressure	N/A [3]	

[1] Y = Yes; N = No; N/A = Not Applicable. CSFs obtained from the product jackets indicate that these products are manufactured from EPA-registered products; however, no product chemistry data have been submitted in support of reregistration. We note that one of the active ingredient sources for the 70.31% FI is no longer registered.

[2] Data pertaining to the identification and quantification of TEPP and the sulfur derivatives of TEPP must be submitted.

[3]Data requirements will be satisfied by data for the active ingredient source product.

Case No. 0238
Chemical No. 057801

Case Name: Diazinon
Registrant: AgrEvo Environmental Health
Product(s): 25% MAI FI (EPA Reg. No. 4816-685) basic and alternate formulations

PRODUCT CHEMISTRY DATA SUMMARY

Guideline Number	Requirement	Are Data Requirements Fulfilled? [1]	MRID Number
830.1550	Product Identity and Disclosure of Ingredients	N	
830.1600 830.1620 830.1650	Starting Materials and Manufacturing Process	N	
830.1670	Discussion of Formation of Impurities	N	
830.1700	Preliminary Analysis	N [2]	
830.1750	Certification of Ingredient Limits	N	
830.1800	Analytical Methods to Verify the Certified Limits	N	
830.6302	Color	N	
830.6303	Physical State	N	
830.6304	Odor	N	
830.6313	Stability	N/A [3]	
830.6314	Oxidation/Reduction	N	
830.6315	Flammability	N	
830.6316	Explodability	N	
830.6317	Storage Stability	N	
830.6319	Miscibility	N	
830.6320	Corrosion Characteristics	N	
830.7000	pH	N	
830.7050	UV/Visible Absorption	N/A [3]	
830.7100	Viscosity	N	
830.7200	Melting Point/Melting Range	N/A [3]	
830.7220	Boiling Point/Boiling Range	N/A [3]	
830.7300	Density/Relative Density/Bulk Density	N	
830.7370	Dissociation Constant in Water	N/A [3]	
830.7550 830.7560 830.7570	Partition Coefficient (Octanol/Water)	N/A [3]	
830.7840 830.7860	Solubility	N/A [3]	
830.7950	Vapor Pressure	N/A [3]	

[1] Y = Yes; N = No; N/A = Not Applicable. CSFs obtained from the product jacket indicate that this product is manufactured from EPA-registered products; however, no product chemistry data have been submitted in support of reregistration. We note that one of the active ingredient sources is no longer registered.

[2] Data pertaining to the identification and quantification of TEPP and the sulfur derivatives of TEPP must be submitted.

[3] Data requirements will be satisfied by data for the active ingredient source product.

Case No. 0238
Chemical No. 057801

Case Name: Diazinon
Registrant: AgrEvo Environmental Health
Product(s): 10% MAI FI (EPA Reg. No. 4816-640)

PRODUCT CHEMISTRY DATA SUMMARY

Guideline Number	Requirement	Are Data Requirements Fulfilled? [1]	MRID Number [2]
830.1550	Product Identity and Disclosure of Ingredients	N	
830.1600 830.1620 830.1650	Starting Materials and Manufacturing Process	N [3]	40449501
830.1670	Discussion of Formation of Impurities	Y	40449501
830.1700	Preliminary Analysis	N [4]	40449501
830.1750	Certification of Ingredient Limits	N	40449501
830.1800	Analytical Methods to Verify the Certified Limits	N [5]	40449501
830.6302	Color	N [6]	40449501
830.6303	Physical State	Y	40449501
830.6304	Odor	Y	40449501
830.6313	Stability	N/A [7]	
830.6314	Oxidation/Reduction	N [8]	40449501
830.6315	Flammability	N [8]	40449501
830.6316	Explodability	N [8]	40449501
830.6317	Storage Stability	N [8]	41757104
830.6319	Miscibility	N [8]	40449501
830.6320	Corrosion Characteristics	N [9]	40449501
830.7000	pH	N [8]	40449501
830.7050	UV/Visible Absorption	N/A [7]	
830.7100	Viscosity	N [8]	40449501
830.7200	Melting Point/Melting Range	N/A [7]	
830.7220	Boiling Point/Boiling Range	N/A [7]	
830.7300	Density/Relative Density/Bulk Density	N [8]	40449501
830.7370	Dissociation Constant in Water	N/A [7]	
830.7550 830.7560 830.7570	Partition Coefficient (Octanol/Water)	N/A [7]	
830.7840 830.7860	Solubility	N/A [7]	
830.7950	Vapor Pressure	N/A [7]	

[1] Y = Yes; N = No; N/A = Not Applicable. Manufactured from an EPA-registered product.

[2] All references were reviewed in the Diazinon Reregistration Standard Update dated 1/24/92.

[3] The relative amounts of the starting materials, a description of the equipment used, and the duration of the formulation process are required.

[4] Data pertaining to the identification and quantification of TEPP and the sulfur derivatives of TEPP must be submitted.

[5] Additional supporting validation data are required for the submitted analytical methods.

[6] The scale used for determining the color value must be provided.

[7] Data requirements will be satisfied by data for the active ingredient source product.

[8] The methods by which the data were obtained are required.

[9] The raw data must be provided to support the submitted statement.

Case No. 0238
Chemical No. 057801

Case Name: Diazinon
Registrant: AgrEvo Environmental Health
Product(s): 5% MAI FI (EPA Reg. No. 4816-245)

PRODUCT CHEMISTRY DATA SUMMARY

Guideline Number	Requirement	Are Data Requirements Fulfilled? [1]	MRID Number [2]
830.1550	Product Identity and Disclosure of Ingredients	N	
830.1600 830.1620 830.1650	Starting Materials and Manufacturing Process	N [3]	40449301
830.1670	Discussion of Formation of Impurities	Y	40449301
830.1700	Preliminary Analysis	N [4]	40449301
830.1750	Certification of Ingredient Limits	N	
830.1800	Analytical Methods to Verify the Certified Limits	N [5]	40449301
830.6302	Color	N [6]	40449301
830.6303	Physical State	Y	40449301
830.6304	Odor	Y	40449301
830.6313	Stability	N/A [7]	
830.6314	Oxidation/Reduction	N [8]	40449301
830.6315	Flammability	N [8]	40449301
830.6316	Explodability	N [8]	40449301
830.6317	Storage Stability	N [8]	41757102
830.6319	Miscibility	N [8]	40449301
830.6320	Corrosion Characteristics	N [9]	40449301
830.7000	pH	N [8]	40449301
830.7050	UV/Visible Absorption	N/A [7]	
830.7100	Viscosity	N [8]	40449301
830.7200	Melting Point/Melting Range	N/A [7]	
830.7220	Boiling Point/Boiling Range	N/A [7]	
830.7300	Density/Relative Density/Bulk Density	N [8]	40449301
830.7370	Dissociation Constant in Water	N/A [7]	
830.7550 830.7560 830.7570	Partition Coefficient (Octanol/Water)	N/A [7]	
830.7840 830.7860	Solubility	N/A [7]	
830.7950	Vapor Pressure	N/A [7]	

[1] Y = Yes; N = No; N/A = Not Applicable. Manufactured from an EPA-registered product.

[2] All references were reviewed in the Diazinon Reregistration Standard Update dated 1/24/92.

[3] The relative amounts of the starting materials, a description of the equipment used, and the duration of the formulation process are required.

[4] Data pertaining to the identification and quantification of TEPP and the sulfur derivatives of TEPP must be submitted.

[5] Additional supporting validation data are required for the submitted analytical methods.

[6] The scale used for determining the color value must be provided.

[7] Data requirements will be satisfied by data for the active ingredient source product.

[8] The methods by which the data were obtained are required.

[9] The raw data must be provided to support the submitted statement.

Case No. 0238
Chemical No. 057801

Case Name: Diazinon
Registrant: AgrEvo Environmental Health
Product(s): 5% MAI FI (EPA Reg. No. 4816-621)

PRODUCT CHEMISTRY DATA SUMMARY

Guideline Number	Requirement	Are Data Requirements Fulfilled? [1]	MRID Number [2]
830.1550	Product Identity and Disclosure of Ingredients	N	
830.1600 830.1620 830.1650	Starting Materials and Manufacturing Process	N [3]	40449201
830.1670	Discussion of Formation of Impurities	Y	40449201
830.1700	Preliminary Analysis	N [4]	40449201
830.1750	Certification of Ingredient Limits	N	40449201
830.1800	Analytical Methods to Verify the Certified Limits	N [5]	40449201
830.6302	Color	N [6]	40449201
830.6303	Physical State	Y	40449201
830.6304	Odor	Y	40449201
830.6313	Stability	N/A [7]	
830.6314	Oxidation/Reduction	N [8]	40449201
830.6315	Flammability	N [8]	40449201
830.6316	Explodability	N [8]	40449201
830.6317	Storage Stability	N [8]	41757103
830.6319	Miscibility	N [8]	40449201
830.6320	Corrosion Characteristics	N [9]	40449201
830.7000	pH	N [8]	40449201
830.7050	UV/Visible Absorption	N/A [7]	
830.7100	Viscosity	N [8]	40449201
830.7200	Melting Point/Melting Range	N/A [7]	
830.7220	Boiling Point/Boiling Range	N/A [7]	
830.7300	Density/Relative Density/Bulk Density	N [8]	40449201
830.7370	Dissociation Constant in Water	N/A [7]	
830.7550 830.7560 830.7570	Partition Coefficient (Octanol/Water)	N/A [7]	
830.7840 830.7860	Solubility	N/A [7]	
830.7950	Vapor Pressure	N/A [7]	

[1] Y = Yes; N = No; N/A = Not Applicable. Manufactured from an EPA-registered product.

[2] All references were reviewed in the Diazinon Reregistration Standard Update dated 1/24/92.

[3] The relative amounts of the starting materials, a description of the equipment used, and the duration of the formulation process are required.

[4] Data pertaining to the identification and quantification of TEPP and the sulfur derivatives of TEPP must be submitted.

[5] Additional supporting validation data are required for the submitted analytical methods.

[6] The scale used for determining the color value must be provided.

[7] Data requirements will be satisfied by data for the active ingredient source product.

[8] The methods by which the data were obtained are required.

[9] The raw data must be provided to support the submitted statement.

Case No. 0238
Chemical No. 057801

Case Name: Diazinon
Registrant: Gowan Company
Product(s): 87% FI (EPA Reg. No. 10163-212) basic and alternate formulations

PRODUCT CHEMISTRY DATA SUMMARY

Guideline Number	Requirement	Are Data Requirements Fulfilled? [1]	MRID Number
830.1550	Product Identity and Disclosure of Ingredients	Y [2]	CSFs 4/25/94
830.1600 830.1620 830.1650	Starting Materials and Manufacturing Process	N/A	
830.1670	Discussion of Formation of Impurities	N/A	
830.1700	Preliminary Analysis	N/A	
830.1750	Certification of Ingredient Limits	Y [2]	CSFs 4/25/94
830.1800	Analytical Methods to Verify the Certified Limits	N/A	
830.6302	Color	N/A	
830.6303	Physical State	N/A	
830.6304	Odor	N/A	
830.6313	Stability	N/A	
830.6314	Oxidation/Reduction	N/A	
830.6315	Flammability	N/A	
830.6316	Explodability	N/A	
830.6317	Storage Stability	N/A	
830.6319	Miscibility	N/A	
830.6320	Corrosion Characteristics	N/A	
830.7000	pH	N/A	
830.7050	UV/Visible Absorption	N/A	
830.7100	Viscosity	N/A	
830.7200	Melting Point/Melting Range	N/A	
830.7220	Boiling Point/Boiling Range	N/A	
830.7300	Density/Relative Density/Bulk Density	N/A	
830.7370	Dissociation Constant in Water	N/A	
830.7550 830.7560 830.7570	Partition Coefficient (Octanol/Water)	N/A	
830.7840 830.7860	Solubility	N/A	
830.7950	Vapor Pressure	N/A	

[1] Y = Yes; N = No; N/A = Not Applicable. CSFs obtained from the product jacket indicate that this product is repackaged from EPA-registered products; data requirements will be satisfied by data for the active ingredient source products.

[2] The nominal concentration and upper and lower certified limits for the active ingredient listed on the CSFs should be based on the actual levels of the active ingredient in the source products.

Case No. 0238
Chemical No. 057801

Case Name: Diazinon
Registrant: Makhteshim Chemical Works Limited
Product(s): Unregistered "unstabilized" TGAI

PRODUCT CHEMISTRY DATA SUMMARY

Guideline Number	Requirement	Are Data Requirements Fulfilled? [1]	MRID Number [2]
830.1550	Product Identity and Disclosure of Ingredients	N/A [3]	
830.1600 830.1620 830.1650	Starting Materials and Manufacturing Process	Y	40423501, 41278901 [4]
830.1670	Discussion of Formation of Impurities	Y	40423501, 41278901 [4]
830.1700	Preliminary Analysis	Y	41249901 [4], 41359501 [5]
830.1750	Certification of Ingredient Limits	N/A [3]	
830.1800	Analytical Methods to Verify the Certified Limits	N/A [3]	
830.6302	Color	Y	40423503
830.6303	Physical State	Y	40423503
830.6304	Odor	Y	40423503
830.6313	Stability	N	
830.6314	Oxidation/Reduction	N/A [3]	
830.6315	Flammability	N/A [3]	
830.6316	Explodability	N/A [3]	
830.6317	Storage Stability	N/A [3]	
830.6319	Miscibility	N/A [3]	
830.6320	Corrosion Characteristics	N/A [3]	
830.7000	pH	Y	40423503
830.7050	UV/Visible Absorption	N [6]	
830.7100	Viscosity	N/A [3]	
830.7200	Melting Point/Melting Range	N/A [7]	
830.7220	Boiling Point/Boiling Range	Y	40423503
830.7300	Density/Relative Density/Bulk Density	Y	40423503
830.7370	Dissociation Constant in Water	N/A [8]	
830.7550 830.7560 830.7570	Partition Coefficient (Octanol/Water)	Y	40423503
830.7840 830.7860	Solubility	Y	40423503
830.7950	Vapor Pressure	Y	40423503

[1] Y = Yes; N = No; N/A = Not Applicable.

[2] References were reviewed under CBRS Nos. 4086 and 4087, 9/7/89, G. Makhijani unless otherwise noted.

[3] Data are not required for the TGAI.

[4] CBRS No. 6008, 12/12/89, G. Makhijani.

[5] Diazinon Reregistration Standard Update dated 1/24/92.

[6] The OPPTS Series 830, Product Properties Test Guidelines require data pertaining to UV/visible absorption for the PAI.

[7] Data are not required because the TGAI is a liquid at room temperature.

[8] Data are not required because the TGAI does not dissociate under normal conditions.

Case No. 0238
Chemical No. 057801

Case Name: Diazinon
Registrant: Makhteshim Chemical Works Limited
Product(s): 92% FI (EPA Reg. No. 11678-6)

PRODUCT CHEMISTRY DATA SUMMARY

Guideline Number	Requirement	Are Data Requirements Fulfilled? [1]	MRID Number [2]
830.1550	Product Identity and Disclosure of Ingredients	Y	40423501
830.1600 830.1620 830.1650	Starting Materials and Manufacturing Process	Y	40423501
830.1670	Discussion of Formation of Impurities	Y	40423501
830.1700	Preliminary Analysis	N [3]	40423502
830.1750	Certification of Ingredient Limits	Y	40423502
830.1800	Analytical Methods to Verify the Certified Limits	N [4]	40423502, 41249901 [5]
830.6302	Color	Y	40423503
830.6303	Physical State	Y	40423503
830.6304	Odor	Y	40423503
830.6313	Stability	N/A [6]	
830.6314	Oxidation/Reduction	Y	40423503
830.6315	Flammability	Y	40423503
830.6316	Explodability	Y	40423503
830.6317	Storage Stability	N	
830.6319	Miscibility	Y	40423503
830.6320	Corrosion Characteristics	Y	40423503
830.7000	pH	Y	40423503
830.7050	UV/Visible Absorption	N/A [6]	
830.7100	Viscosity	N [7]	40423503
830.7200	Melting Point/Melting Range	N/A [6]	
830.7220	Boiling Point/Boiling Range	N/A [6]	
830.7300	Density/Relative Density/Bulk Density	Y	40423503
830.7370	Dissociation Constant in Water	N/A [6]	
830.7550 830.7560 830.7570	Partition Coefficient (Octanol/Water)	N/A [6]	
830.7840 830.7860	Solubility	N/A [6]	
830.7950	Vapor Pressure	N/A [6]	

[1] Y = Yes; N = No; N/A = Not Applicable. Manufactured from the unregistered "unstabilized" TGAI.

[2] References were reviewed under CBRS Nos. 4086 and 4087, 9/7/89, G. Makhijani unless otherwise noted.

[3] Data pertaining to the identification and quantification of TEPP and the sulfur derivatives of TEPP must be submitted.

[4] Detailed analytical methods for the determination of the active ingredient and impurities, and complete validation data are required.

[5] CBRS No. 6008, 12/12/89, G. Makhijani.

[6] Data requirements will be satisfied by data for the active ingredient source product.

[7] Results should be expressed in terms of poises, stokes, or other conventional units.

Case No. 0238
Chemical No. 057801

Case Name: Diazinon
Registrant: Makhteshim Chemical Works Limited
Product(s): 87% FI (EPA Reg. No. 11678-20)

PRODUCT CHEMISTRY DATA SUMMARY

Guideline Number	Requirement	Are Data Requirements Fulfilled? [1]	MRID Number [2]
830.1550	Product Identity and Disclosure of Ingredients	Y	40423401
830.1600 830.1620 830.1650	Starting Materials and Manufacturing Process	Y	40423401
830.1670	Discussion of Formation of Impurities	Y	40423401
830.1700	Preliminary Analysis	N [3]	40423402
830.1750	Certification of Ingredient Limits	N [4]	40423402
830.1800	Analytical Methods to Verify the Certified Limits	N [5]	40423402
830.6302	Color	Y	40423403
830.6303	Physical State	Y	40423403
830.6304	Odor	Y	40423403
830.6313	Stability	N/A [6]	
830.6314	Oxidation/Reduction	Y	40423403
830.6315	Flammability	Y	40423403
830.6316	Explodability	Y	40423403
830.6317	Storage Stability	N [7]	40833501 [8]
830.6319	Miscibility	Y	40423403
830.6320	Corrosion Characteristics	Y	40423403
830.7000	pH	Y	40423403
830.7050	UV/Visible Absorption	N/A [6]	
830.7100	Viscosity	N [9]	40423403
830.7200	Melting Point/Melting Range	N/A [6]	
830.7220	Boiling Point/Boiling Range	N/A [6]	
830.7300	Density/Relative Density/Bulk Density	Y	40423403
830.7370	Dissociation Constant in Water	N/A [6]	
830.7550 830.7560 830.7570	Partition Coefficient (Octanol/Water)	N/A [6]	
830.7840 830.7860	Solubility	N/A [6]	
830.7950	Vapor Pressure	N/A [6]	

[1] Y = Yes; N = No; N/A = Not Applicable. Manufactured from the unregistered "unstabilized" TGAI.

[2] References were reviewed under CBRS Nos. 4086 and 4087, 9/7/89, G. Makhijani unless otherwise noted.

[3] Data pertaining to the identification and quantification of TEPP and the sulfur derivatives of TEPP must be submitted.

[4] A revised CSF listing the active ingredients and impurities must be submitted.

[5] Detailed analytical methods for the determination of the active ingredient and impurities, and complete validation data are required.

[6] Data requirements will be satisfied by data for the active ingredient source product.

[7] The registrant must verify that glass bottles are representative of commercial storage containers.

[8] Diazinon Reregistration Standard Update dated 1/24/92.

[9] Results should be expressed in terms of poises, stokes, or other conventional units.

Case No. 0238
Chemical No. 057801

Case Name: Diazinon
Registrant: Drexel Chemical Company
Product(s): 87% FI (EPA Reg. No. 19713-104) basic and alternate formulations

PRODUCT CHEMISTRY DATA SUMMARY

Guideline Number	Requirement	Are Data Requirements Fulfilled? [1]	MRID Number [2]
830.1550	Product Identity and Disclosure of Ingredients	Y [3]	CSF dated 5/20/94
830.1600 830.1620 830.1650	Starting Materials and Manufacturing Process	N/A	
830.1670	Discussion of Formation of Impurities	N/A	
830.1700	Preliminary Analysis	N/A	
830.1750	Certification of Ingredient Limits	Y [3]	CSF dated 5/20/94
830.1800	Analytical Methods to Verify the Certified Limits	N/A	
830.6302	Color	N/A	
830.6303	Physical State	N/A	
830.6304	Odor	N/A	
830.6313	Stability	N/A	
830.6314	Oxidation/Reduction	N/A	
830.6315	Flammability	N/A	
830.6316	Explodability	N/A	
830.6317	Storage Stability	N/A	
830.6319	Miscibility	N/A	
830.6320	Corrosion Characteristics	N/A	
830.7000	pH	N/A	
830.7050	UV/Visible Absorption	N/A	
830.7100	Viscosity	N/A	
830.7200	Melting Point/Melting Range	N/A	
830.7220	Boiling Point/Boiling Range	N/A	
830.7300	Density/Relative Density/Bulk Density	N/A	
830.7370	Dissociation Constant in Water	N/A	
830.7550 830.7560 830.7570	Partition Coefficient (Octanol/Water)	N/A	
830.7840 830.7860	Solubility	N/A	
830.7950	Vapor Pressure	N/A	

[1] Y = Yes; N = No; N/A = Not Applicable. CSFs obtained from the product jacket indicate that this product is repackaged from EPA-registered products; data requirements will be satisfied by data for the active ingredient source products. We note that two of the active ingredient source products are no longer registered.

[2] We note that the nominal concentration and upper and lower certified limits for the active ingredient listed on the CSFs should be based on the actual levels of the active ingredient in the source products.

Diazinon

REREGISTRATION ELIGIBILITY DECISION

RESIDUE CHEMISTRY CONSIDERATIONS

PC Code 057801; Case 0238

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Diazinon

REREGISTRATION ELIGIBILITY DOCUMENT

RESIDUE CHEMISTRY CONSIDERATIONS

PC Code. 057801; Case 0238

INTRODUCTION

Diazinon (*O,O,*-diethyl-*O*-[2-isopropyl-6-methyl-4-pyrimidinyl]phosphorothioate) is an insecticide registered for use on numerous food/feed crops (Refer to Table A: Attachment 1). Formulations registered for use on food and feed crops include wettable powder (WP), emulsifiable concentrate (EC), granular (G), and soluble concentrate (SC/L) formulations registered to Novartis, Inc. Pre-plant soil applications are made with ground equipment and foliar applications are made with ground and aerial equipment. Diazinon dust (D), EC, and SC/L formulations are also registered for treatment of food handling establishments and a WP formulation is registered for dermal applications to sheep and the premises of livestock. .Diazonon impregnated ear tags are registered for use on cattle.

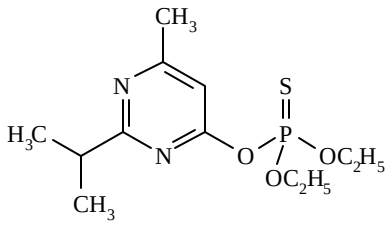
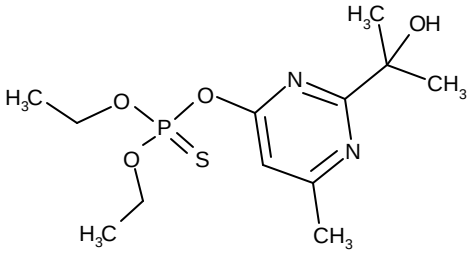
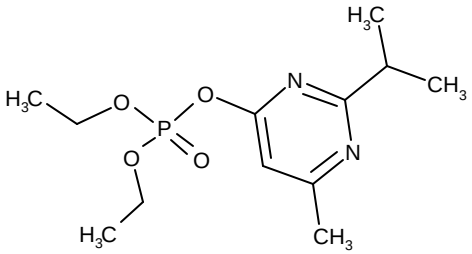
REGULATORY BACKGROUND

Diazinon is a list A reregistration chemical and was the subject of a 1988 Guidance Document and a 1992 Reregistration Standard Update; a 1996 Data Call-In (DCI) was also issued. These documents summarized regulatory conclusions on the available residue chemistry data and specified that additional data were required for reregistration purposes. Several submissions of data have been received since the Update, including a comprehensive response to the 1996 DCI (CBRS No. 17507, DP Barcode D228959, 8/29/96, S. Funk). The information contained in this document outlines the current Residue Chemistry Science Assessments with respect to the reregistration of diazinon.

Tolerances for diazinon residues in/on plant raw agricultural commodities (RACs) and in processed food and animal feed are currently expressed in terms of diazinon *per se* in [40 CFR §180.153 (a)]. Tolerances for Section 18 emergency exemptions are given in [40 CFR §180.153 (b)] and tolerances with regional registrations are given in [40 CFR §180.153(c)] Adequate methods are available for the enforcement of established tolerances, as currently defined.

The nature of the residue of diazinon in plants and animals is understood. The HED Metabolism Committee has determined that the residues of concern in plants and animals are diazinon, hydroxy diazinon, and diazoxon. For enforcement purposes, diazinon, *per se* will be included in the tolerance expression. However, residues of diazinon, and its metabolites, hydroxy diazinon and diazoxon, will be included in dietary risk assessment. Both of these metabolites are considered to be cholinesterase inhibitors. The chemical names and structures of the diazinon residues of concern are depicted in Figure A.

Figure A. Diazinon.

Common Name/Code Chemical Name	Structure
Diazinon *O,O*-diethyl-*O*-[2-isopropyl-6-methyl-4-pyrimidinyl]-phosphorothioate	
Hydroxy-diazinon, CGA-14128 O,O-diethyl O-(2-(1-hydroxy-1-methylethyl)-6-methyl-4-pyrimidinyl) phosphorothioate	
Diazinon oxygen analog, G24567 O,O-diethyl 6-methyl-2-(1-methylethyl)-4-pyrimidinyl phosphate	

SUMMARY OF SCIENCE FINDINGS

OPPTS GLN 860.1200: Directions for Use

A search of the Agency's Reference Files System (REFS) on 09/15/99 indicates that there are twelve diazinon end-use products registered to Novartis with food/feed uses. These products are presented below.

EPA Reg No.	Label Acceptance Date	Formulation Class	Product Name
100-445	6/90	2% D	D.Z.N. Diazinon 2D
100-456 [a]	8/96	2 lb/gal EC	D.Z.N. Lawn and Garden Insect Control
100-460 [b]	2/97	50% WP	D-Z-N Diazinon 50W Insecticide
100-461	3/97	4 lb/gal EC	D.Z.N. Diazinon AG500
100-463	4/96	4 lb/gal EC	D.Z.N. Diazinon 4E
100-469	7/96	14% G	D.Z.N. Diazinon 14 G
100-528 [a]	10/96	5% G	D.Z.N. 6000 Lawn and Garden Insect Control
100-926	9/98	2% D	D.Z.N. Diazinon Garden Insect Dust
100-687	11/96	0.4 lb/gal EW	D.Z.N. 5.0 EW (Emulsion in water)
100-770 [a]	10/96	2 lb/gal EC	D.Z.N. Diazinon Lawn and Garden WBC
100-784	2/97	4.5 lb/gal SC/L	D.Z.N. Diazinon AG600 WBC
100-785	11/96	4.5 lb/gal SC/L	D.Z.N. Diazinon Indoor/Outdoor WBC

[a] These products are registered for use in the home lawn and garden only and are therefore not summarized in Table A attachment.

[b] Includes SLN No. CA810005.

A review of the above labels and supporting residue data indicate that the following label amendments are required:

The use of diazinon on the following crops is not being supported by Novartis: alfalfa, bananas, citrus fruits, clover, coffee, cotton, cowpeas, figs, filberts, grasses, lespedeza, olives, peanuts, peas (dried), pecans, sorghum, soybeans, sugarcane, and trefoil (birdsfoot).

For the 50% WP (EPA Reg. No. 100-460), a maximum seasonal application rate must be specified for all vegetable crops as was done for fruits. Minimum spray volumes using ground and aerial equipment must be specified for hops and sugar beets. For surface applications to mushroom houses, a maximum application rate expressed as lb ai/ft^2 and a minimum retreatment interval must be specified. For dermal applications to sheep, the specified 14-day pre-slaughter interval (PSI) is too long. The maximum allowable PSI is 3 days. In addition, the minimum retreatment interval for both dermal applications to sheep and surface applications to livestock housing must be indicated. A use as a seed treatment on corn is indicated. The registrant has indicated that the use is intended for sweet and field corn seed treatments. This should be reflected on the label. Residue data for foliar uses on sweet corn should cover anticipated residues from seed treatments on either field or sweet corn.

For the 4 lb/gal EC and the 4.5 lb/gal SC/L (EPA Reg. Nos. 100-461 and 100-784), a maximum seasonal application rate must be specified for broccoli, brussels sprouts, cabbage, and cauliflower. Minimum spray volumes using ground and aerial equipment must be specified for hops and sugar beets.

The food/feed use labels, EPA Reg. Nos. 100-460, 100-461, and 100-784, were accepted with comments from the Agency (letters dated 2/27/97, 3/6/97, and 2/24/97 respectively, from G. LaRocca, PM13, RD). The labels must be amended according to the comments. The comments include a clarification of the maximum single and maximum seasonal application rate for caneberries. The rates given for caneberries on labels 100-460 and 100-461 must be lowered to be consistent with the rates given on label 100-784.

The 0.4 lb/gal EC that is registered for use in food handling establishments (EPA Reg. No. 100-687) was accepted with comments in a letter dated 11/5/96 from G. LaRocca. The comments state that the maximum area of a limited spot treatment and the definition of food/feed areas of food and feed handling establishments must be clarified. The label must be amended according to the comments.

A tabular summary of the residue chemistry science assessments for reregistration of diazinon is presented in Table B. The conclusions listed in Table B regarding the reregistration eligibility of diazinon food/feed uses are based on the use patterns registered by the basic producer, Novartis. When end-use product DCIs are developed (e.g., at issuance of the RED), RD should require that all end-use product labels (e.g., MAI labels, SLNs, and products subject to the generic data exemption) be amended such that they are consistent with the basic producer's labels.

OPPTS GLN 860.1300: Nature of the Residue in Plants:

The qualitative nature of the residue in plants is adequately understood pending review of confirmatory data from existing lettuce and green bean studies. Acceptable metabolism studies are available on sweet corn and potato. The HED Metabolism Committee (4/17/98) has determined that the residues of concern in plants and animals are diazinon, hydroxy diazinon, and diazoxon. For enforcement purposes, diazinon, *per se* will be included in the tolerance expression. However, residues of diazinon, and its metabolites, hydroxy diazinon and diazoxon, will be included in dietary risk assessment. Both of these metabolites are considered to be cholinesterase inhibitors. Residue data for plant commodities should include analyses for all three compounds.

OPPTS GLN 860.1300: Nature of the Residue in Livestock:

The qualitative nature of the residue in animals is adequately understood based upon acceptable poultry and ruminant metabolism studies. The HED Metabolism Committee has determined that the residues of concern in animals are diazinon, hydroxy diazinon, and diazoxon. For enforcement purposes, diazinon, *per se*, will be included in the tolerance expression. However, residues of diazinon, and its metabolites, hydroxy diazinon and diazoxon, will be included in dietary risk assessment. Both of these metabolites are considered to be cholinesterase inhibitors. Residue data for animal commodities should include analyses for all three compounds.

OPPTS GLN 860.1340: Residue Analytical Methods:

Adequate analytical methodology is available for data collection and enforcing tolerances of diazinon. Ciba-Geigy Method AG-550 (along with modifications) is a GC/FPD method that adequately recovers diazinon, diazoxon, and hydroxydiazinon from plant and animal matrices, and is the registrant's proposed enforcement method. The AG-550 protocol also contains a confirmatory method that uses GC/MS. As this method is essentially a modification of the Luke multiresidue method, independent laboratory validation may not be required pending radiovalidation with samples from the metabolism studies.

OPPTS GLN 860.1360: Multiresidue Method:

The FDA PESTDATA database dated 1/94 (PAM, Vol. I, Appendix I) indicates diazinon is completely recovered using FDA Multiresidue Protocols D and E (PAM, Vol. I Sections 232.4 and 311.1/212.2). Diazoxon and hydroxy diazinon are also completely recovered using Protocol D.

OPPTS GLN 860.1380: Storage Stability:

Storage stability data are available indicating that diazinon and hydroxydiazinon are stable in/on frozen raw agricultural commodities (RACs) for up to 26 months. Diazoxon is not stable (<3 months). The registrant intends to conduct storage stability testing on residues in processed commodities, meat, and milk. However, the registrant may wish to note that tolerances for residues of diazinon in livestock meat and meat byproducts, *excluding cattle fat and the meat, fat, and meat byproducts of sheep*, are being recommended for revocation based on a determination that category 180.6(a)3 applies to these commodities, and that the establishment of a tolerance for milk is not warranted. Also additional stability studies are also being conducted on diazoxon and hydroxydiazinon to support special studies underway to determine the dissipation of diazoxon in fresh produce. Specifically, the registrant is generating storage stability data on diazoxon residues in snap beans, carrots, spinach, plums, sweet corn, and apples.

OPPTS GLN 860.1500: Magnitude of the Residue in Crop Plants:

For purposes of reregistration, requirements for magnitude of the residue in plants are fulfilled for the following crops: almonds (use in California only), apples, beans (snap), brassica leafy vegetables, blackberries, boysenberries, carrots, cherries, corn (sweet), cranberries, figs, grapes, kiwi fruits (tolerance import only), mushrooms, nectarines, peaches, peas (succulent), peppers, plums, onions (dry bulb), pears, peppers (bell), pineapples, potatoes, radish/Chinese radish, squash, strawberries, tomatoes, turnips (roots and tops), walnuts (use in California only), and watercress. Adequate field trial data depicting diazinon residues following applications made according to the maximum or proposed use patterns have been submitted for these crops. Geographical representation is adequate and a sufficient number of trials reflecting representative formulation classes were conducted.

IR-4 submitted data to support reassessed tolerances for figs (MRID 44726801). The tolerance for figs has been reassessed based on the submitted residue data. IR-4 submitted data (MRID 44237101) to support a reassessed tolerance (see Table C) for watercress based on 2 applications at 0.5 lbs ai/A with 10 days between applications and a 5-day pre-harvest interval (PHI). The registrant can reinstate watercress on the labels or Hawaii can apply for a 24(c) Special Local Need (SLN) for watercress. IR-4 is supporting uses on filberts. They have generated residue field trial data; once these data have been submitted and reviewed, the tolerance for filberts can be reassessed.

Additional data are to be submitted on beans (lima), blueberries, celery, cucumbers, hops, dried peas (IR-4), spinach, sugar beets, and Swiss chard. The registrant has generated residue data on sugar beets, celery, spinach, Swiss chard, lima beans, and cucumbers. Once residue data on these representative crops has been received and reviewed, sufficient data should be available to support tolerance reassessment for the crops listed above and the following crops: beet tops (garden), chicory, endive, melons, parsley, and squash. Alternatively, once the residue data for the above-listed crops has been submitted and reviewed, if any interested party wishes to support additional crop uses within a crop grouping, sufficient residue data should be available to support crop group tolerances.

The registrant is not supporting uses on the following crops for which tolerances are established: alfalfa, bananas, citrus fruits, clover, coffee, cottonseed, figs, filberts, grasses, olives, peanuts, pecans, sorghum, soybeans, or sugarcane. The Agency is proposing to revoke tolerances for beans, guar, cowpeas, olives, peanuts, pecans, soybeans, and sugarcane, as of January 2000. Once it has been determined that no other interested party wishes to support the remaining uses for alfalfa, bananas, citrus fruits, clover, coffee, cottonseed, filberts, and grasses these tolerances should be revoked as well. IR-4 has submitted residue data to support uses on figs, and will support uses on filberts as noted above.

OPPTS GLN 860.1520: Magnitude of the Residue in Processed Food/Feed:

The reregistration requirements for magnitude of the residue in processed food/feed commodities are fulfilled for apple, figs, grapes, pineapples, plums, potatoes, and tomatoes.

Residues of diazinon did not concentrate in plant processed commodities except for dried figs (6X). Preliminary data indicate that residues of diazinon may concentrate in dried sugar beet pulp (2X); however, additional residue data on sugar beets reflecting current label rates and PHI are necessary to determine if feed additive tolerances are necessary. Once the residue data are received and reviewed a tolerance may need to be established for sugar beet pulp based on the concentration factor and the highest average field trial (HAFT) residue for sugar beets. Tolerances should be established on dried figs and may be warranted for dried sugar beet pulp.

OPPTS GLN 860.1480: Magnitude of the Residue in Meat, Milk, Poultry, and Eggs:

The calculated maximum theoretical dietary burdens for livestock are presented below (sugar beet tops are not fed to dairy cattle):

Feed Commodity	% Dry Matter [a]	% Diet [a]	Reassessed Tolerance (ppm)	Dietary Contribution (ppm) [d]
Beef Cattle				
Almonds, hulls	90	10	3.0	0.33
Corn forage	48	40	10.0	8.3
Sugar beet pulp	88	20	1.0	0.28
Sugar beet tops	23	10	10.0	4.3
Other	--	20	0	0
TOTAL BURDEN		100		13.3
Dairy Cattle				
Almonds, hulls	90	10	3.0	0.33
Corn forage	48	50	10.0	10.4
Sugar beet pulp	88	20	1.0	0.28
Other	--	20		0
TOTAL BURDEN		100		11.0

[a] Table 1 (August 1996).
[b] Contribution =[(Reassessed tolerance / fraction DM) X fraction diet].

A ruminant feeding study (MRID 43274402) has been reviewed and deemed adequate for diazinon, diazoxon, and hydroxy diazinon and to support reregistration of diazinon. Sheep and cattle dermal treatment studies have also been reviewed.

The tolerance for cattle meat and meat by-products (mbyp) can be revoked as there is "no reasonable expectation of finite residues" {Category 180.6(a)3} on cattle meat and mbyp from registered uses of cattle ear tags or from the consumption of diazinon treated feed items by cattle. However, based on the results of the cattle ear tag studies (MRIDs 45233501, 45233502, 45233503, and 45233504), the

existing tolerance for cattle fat should be decreased from 0.7 ppm to 0.5 ppm. A diazinon tolerance for milk is not required as long as the ear tag labels maintain that use is for beef cattle and *non-lactating* dairy cattle, only.

Summaries of studies measuring the magnitude of diazinon residues in sheep tissues after spray or pour-on applications have been submitted and reviewed (MRID 44231901). Existing tolerances of 0.7 ppm in sheep tissues (meat and meat byproducts) are adequate. However, the existing tolerance for diazinon in sheep, fat should be raised from 0.7 ppm to 5.0 ppm.

A poultry feeding study has been deemed adequate for diazinon, diazoxon, and hydroxydiazinon pending the submission of supporting storage stability data. A 40 CFR §180.6(a)(3) condition exists and tolerances for poultry tissues and eggs will not be required.

OPPTS GLN 860.1400: Magnitude of the Residue in Water, Fish, and Irrigated Crops

The labels listing uses on cranberries have been revised to include a restriction against using water from irrigated or flooded cranberry bogs or watercress beds to irrigate other crops (except other crops with registered diazinon uses) or for drinking purposes: "Do not use water from irrigated or flooded cranberry beds for drinking purposes or to irrigate crops other than those appearing on EPA Approved Diazinon labels". This language should be added to the following existing 24(c) labels specific to cranberry uses: OR900017 and WA900027 (Gowan), WA970001, WI980003, NJ970001, OR970002, and MA970001 (Palette), and WI880009 (Wilber Ellis).

Given this label restriction, OPPTS GLN 860.1400 does not apply to diazinon.

OPPTS GLN 860.1460: Magnitude of the Residue in Food/Feed-Handling Establishments

Labeled uses of diazinon in food and feed handling establishments are listed on the diazinon dust, SC/L, and EC formulations. Adequate data are available reflecting the use of diazinon in food handling establishments. The data reviewed in the Reregistration Standard Update indicate that tolerances of 0.02 ppm (the limit of quantitation for the method) should be established for residues in food and feed resulting from use of diazinon in food and feed handling establishments based on non-detectable residues of diazinon, hydroxy diazinon, and diazoxon at 1X and 2X use rates. The establishment of a tolerance is necessary because use in food/feed handling establishments is considered a food use, it is not necessary to include this use in the dietary risk assessment. Labels require that diazinon be applied as a limited spot treatment or a crack and crevice treatment only. Foods must be removed and/or covered during application. Based on data submitted to support the food additive petition (180.153(a)(2) & (3)) and associated label restrictions on commercial applicators applying diazinon in food/feed handling establishments, there is no likelihood of detectable residues (limit of detection (LOD) = 0.01 ppm) on food/feed provided label directions are followed.

OPPTS GLN 860.1850: Confined Accumulation in Rotational Crops:

An adequate confined rotational crop study is available. These data indicate that residues of diazinon in rotational crops are qualitatively similar to the residues resulting from the direct application of diazinon to the primary crops. Based on the results of this study, limited field rotational crop studies are required.

OPPTS GLN 860.1900: Field Accumulation in Rotational Crops:

The registrant has agreed to conduct limited field rotational studies on representative crops. The registrant informs the Agency that these studies have been conducted. Once the data are submitted to the Agency, they will be reviewed for tolerance reassessment.

Table B. Residue Chemistry Science Assessments for Reregistration of Diazinon.

OPPTS GLN: Data Requirements	Current Tolerances, ppm [40 CFR]	Must Additional Data Be Submitted?	References [1]
860.1200: Directions for use	N/A	Yes [2]	See Table A attachment.
860.1300: Nature of the Residue			
- Plants	N/A	No	**41349601 41349602 41349603 41618605 41618606 41374002** 43910001 [3] 43910002 [3]
- Livestock	N/A	No	**40879802 40879803 40879804 40879805 41225901 41374002 41386401** 43910003 [3]
860.1340: Residue Analytical Methods			
- Plants and animals	N/A	Yes [4]	00034132 00057235 00061988 00089632 00089634 00090324 00090343 00125096 00125557 00125620 00127229 00129308 00131006 00135470 00135471 00140118 **41072601 41374001**
860.1360: Multiresidue Method	N/A	No	**41072602**
860.1380: Storage Stability	N/A	Yes [5]	**41336503 41336504 41378201 41528901** 41867001 [6] 42322403 [7] 42522901 [6] 42604901 [8] 43909401 [9]
860.1500: Magnitude the Residue in Crop Plants			
Root and Tuber Vegetables Group			
- Beets, roots	0.5 [§180.153]	No [10]	00125078
- Carrots	0.75 [§180.153]	No [10]	00108982 **41336514**
- Ginseng	0.75 [§180.153]	No [10]	
- Parsnips	0.5 [§180.153]	No [10]	00108982
- Potatoes	0.1 [§180.153]	No	00106977 **41336514**
- Radishes, Chinese, roots	0.1 [§180.153]	No [10]	**41336514**
- Radishes, roots	0.5 [§180.153]	No [10]	00033669 0008982 **41336514**
- Rutabagas	0.75 [§180.153]	No [10]	
- Sugar beets, roots	0.5 [§180.153]	Yes [11]	00055415 **41336514**
- Sweet potatoes	0.1 [§180.153]	No [12]	00106977
- Turnips, roots	0.5 [§180.153]	No [10]	00033245 00033670 00108982

(continued; footnotes follow)

Table B *(continued)*.

OPPTS GLN: Data Requirements	Current Tolerances, ppm [40 CFR]	Must Additional Data Be Submitted?	References [1]
Leaves of Root and Tuber Vegetables Group			
- Beets, tops	0.7 [§180.153]	No [13]	
- Radish, Chinese, tops	0.1 [§180.153]	No [13]	
- Sugar beets, tops	10.0 [§180.153]	Yes [11]	00055429 **41336514**
- Turnip, greens	0.75 [§180.153]	No [13]	00033245 00108982 **41336514**
Bulb Vegetables Group			
- Onions	0.75 [§180.153]	No	00089485 **41336506**
Leafy Vegetables (Except Brassica) Group			
- Celery	0.7 [§180.153]	Yes [14]	00057235 00108980 **41336507**
- Chicory, red (radicchio)	0.7 [§180.153]	No [15]	
- Dandelions	0.7 [§180.153]	No [15]	
- Endive (escarole)	0.7 [§180.153]	No [15]	00108982
- Lettuce	0.7 [§180.153]	No [15]	00118036 **41336507**
- Parsley	0.75 [§180.153]	No [15]	00108982
- Spinach	0.7 [§180.153]	Yes [16]	**41336507**
- Swiss chard	0.7 [§180.153]	Yes [17]	00108982
Brassica Leafy Vegetables Group	0.7 [§180.153]	No	00057235 00089803 00091537 00106977 00108982 **41336515** 42521203 [8]
Legume Vegetables Group			
- Beans, guar	0.1 [§180.153]	No	00123752
- Beans, lima	0.5 [§180.153]	Yes [18]	00064253 00108982 **41336513**
- Beans, snap	0.5 [§180.153]	No	00032666 00089485 **41336513**
- Cowpeas	0.1 [§180.153]	No [19]	00091357
- Peas	0.5 [§180.153]	Yes [20]	00089633 00125542 00129308 **41336513**
- Soybeans	0.1 [§180.153]	No [21]	00034063 00091534
Foliage of Legume Vegetables Group			
- Beans, guar, forage	0.1 [§180.153]	No [22]	00123752
- Beans, hay	10.0 [§180.153]	No [22]	00089485 00032666 **41336513**
- Cowpeas, forage	0.1 [§180.153]	No [22]	

(continued; footnotes follow)

Table B *(continued)*.

OPPTS GLN: Data Requirements	Current Tolerances, ppm [40 CFR]	Must Additional Data Be Submitted?	References [1]
- Peas, vines	25.0 [§180.153]	No [22]	00089633 00125542 00129308 **41336513**
- Peas, vines, hay	10.0 [§180.153]	No [22]	00089633 00125542 00129308 **41336513**
- Soybeans, forage	0.1 [§180.153]	No [22]	00034063 00091534 00091537
Fruiting Vegetables Group			
- Peppers	0.5 [§180.153]	No	00108980 **41336508**
- Tomatoes	0.75 [§180.153]	No	00031954 00094195 **41336508 41729701**
Cucurbit Vegetables Group			
- Cucumbers	0.75 [§180.153]	Yes [23]	00089485 **41336416**
- Melons	0.75 [§180.153]	No [23]	00108982 **41336516**
- Squash, summer	0.7 [§180.153]	No [23]	00108982 **41336516**
- Squash, winter	0.5 [§180.153]	No [23]	00108982 **41336516**
Citrus Fruits Group	0.7 [§180.153]	No [24]	00032884 00057665 00125096
Pome Fruits Group			
- Apples	0.5 [§180.153]	No	**41336512** 42521201 [8]
- Pears	0.5 [§180.153]	No	**41336512** 42521201 [8]
Stone Fruits Group			
- Apricots	0.5 [§180.153]	No	00108980
- Cherries	0.75 [§180.153]	No	00057235 00061987 **41336511** 43274401
- Nectarines	0.5 [§180.153]	No	00108980 43274401
- Peaches	0.75 [§180.153]	No	00108980 **41336511** 43274401
- Plums	0.5 [§180.153]	No	**41336511** 43274401
Small Fruits and Berries Group			
- Blackberries	0.5 [§180.153]	No	00055419 **41336517**
- Blueberries	0.5 [§180.153]	Yes [25]	00055418 42222701 [26]
- Boysenberries	0.5 [§180.153]	No	00055420
- Dewberries	0.5 [§180.153]	No	
- Loganberries	0.75 [§180.153]	No	00055421
- Raspberries	0.5 [§180.153]	No	00055421 **41336517**
Tree Nuts Group			
- Almonds (CA only)	0.5 [§180.153]	No	00091537 **41336518**

(continued; footnotes follow)

Table B *(continued)*.

OPPTS GLN: Data Requirements	Current Tolerances, ppm [40 CFR]	Must Additional Data Be Submitted?	References [1]
- Almond, hulls	3.0 [§180.153]	No	00091537 **41336518**
- Filberts	0.5 [§180.153]	No [27]	00091537
- Pecans	0.5 [§180.153]	No [27]	00091537
- Walnuts (CA only)	0.5 [§180.153]	No	00091537 **41336518**
Cereal Grains Group			
- Corn, sweet (K+CWHR)	0.7 [§180.153]	No	00034132 00034804 00090253 **41336505**
- Sorghum, grain	0.75 [§180.153]	No [28]	00091499
Forage, Fodder, and Straw of Cereal Grains Group			
- Corn, forage	40.0 [§180.153]	No	00034132 00034804 00089801 00090253 **41336515**
- Sorghum, forage	10.0 [§180.153]	No [28]	00034075 00091499
Grass Forage, Fodder, and Hay Group			
- Grasses	60.0 [§180.153]	No [29]	00034047 00086949 00090253 00118019 00130997
- Grasses, hay	10.0 [§180.153]	No [29]	00034047 00086949 00090253 00118019 00130997
Nongrass Animal Feeds Group			
- Alfalfa, fresh	40.0 [§180.153]	No [30]	00033664 00033674 00089633 00125542
- Alfalfa, hay	10.0 [§180.153]	No [30]	00033664 00033674 00089633 00125542
- Clover, fresh	40.0 [§180.153]	No [30]	00113281
- Clover, hay	10.0 [§180.153]	No [30]	00113281
- Lespedeza	1.0 [§180.153]	No [30]	00091537
- Birdsfoot trefoil	40.0 [§180.153]	No [30]	
- Birdsfoot trefoil, hay	10.0 [§180.153]	No [30]	
Miscellaneous Commodities			
- Bananas	0.2 [§180.153]	No	00057665 00121727 42322402 [7] 42527001 [31]
- Bananas, pulp	0.1 [§180.153]	No	00057665 00121727 42322402 [7] 42527001 [31]
- Coffee beans	0.2 [§180.153]	No [32]	00125620 00120130
- Cottonseed	0.2 [§180.153]	No [33]	00032881
- Cranberries	0.75 [§180.153]	No	00108982 **41434601**

(continued; footnotes follow)

Table B *(continued)*.

OPPTS GLN: Data Requirements	Current Tolerances, ppm [40 CFR]	Must Additional Data Be Submitted?	References [1]
- Figs	0.5 [§180.153]	No [34]	00089485 44726801
- Grapes	0.75 [§180.153]	No	00101149 00108982 **41410001** 42521202 [8]
- Hops	0.75 [§180.153]	Yes [35]	00089485 **41336509**
- Kiwi fruits	0.75 [§180.153]	No [36]	42322403 [7]
- Mushrooms	0.75 [§180.153]	No	00066159 00140118 42322401 [7]
- Olives	1.0 [§180.153]	No [37]	00089442
- Peanuts	0.75 [§180.153]	No [38]	00033671 00106977
- Peanuts, forage	40.0 [§180.153]	No [38]	00033671 00106977
- Peanuts, hay	10.0 [§180.153]	No [38]	00033671 00106977
- Peanuts, hulls	10.0 [§180.153]	No [38]	00033671 00106977
- Pineapples	0.5 [§180.153]	No [39]	00055414 00055425 42179501 [39] 43909401 [9]
- Strawberries	0.5 [§180.153]	No	00108980 **41336510**
- Sugarcane	0.75 [§180.153]	No [40]	000106977
- Watercress	0.7 [§180.153]	No [41]	00057665 44237101
860.1520: Processed Food/Feed			
- Apples	None	No	**41336512**
- Citrus fruit	None	No [42]	
- Coffee beans	None	No [42]	
- Cottonseed	None	No [42]	
- Grapes	None	No	**41400001**
- Olives	None	No [42]	
- Peanuts	None	No [42]	
- Pineapples	None	No	42179501 [39]
- Plums	None	No	**41336511** 43274401
- Potatoes	None	No	**41336514**
- Sorghum, grain	None	No [42]	
- Soybeans	None	No [42]	
- Sugar beets	None	No	**41336514**
- Sugarcane	None	No [42]	
- Tomatoes	None	No	**41336508 41729701**
860.1480: Meat, Milk, Poultry, and Eggs			
- Eggs	None	No	00091533 43828001 [43]

(continued; footnotes follow)

Table B *(continued)*.

OPPTS GLN: Data Requirements	Current Tolerances, ppm [40 CFR]	Must Additional Data Be Submitted?	References [1]
- Milk	None	No	00089634 00090254 05005830 43274402 [44]
Cattle and sheep:		No	00089634 00090250
- Fat	0.7 [§180.153]		00090343 00125557 44231901/43274402 [44]
- Meat	0.7 [§180.153]	No	00089634 00090250 00090343 00125557 44231901/43274402 [44]
- Mbyp	0.7 [§180.153]	No	00089634 00090250 00090343 00125557 44231901/43274402 [44]
Poultry:			
- Fat	None	No	43828001 [43]
- Meat	None	No	43828001 [43]
- Mbyp	None	No	43828001 [43]
860.1400: Water, Fish, and Irrigated Crops	None	No [45]	
860.1460: Food Handling	[§185.1750] [§186.1750]	No	00084599 00109994 **41336519**
860.1850: Confined Accumulation in Rotational Crops	N/A	No	41618601 [46] 41618602 [46]
860.1900: Field Accumulation in Rotational Crops	None	Yes [47]	41618603 [46]

1. Non-annotated references were cited in the 1988 Guidance Document. References in **boldface** were cited in the Diazinon Reregistration Standard Update (1/24/92). Other references were reviewed as noted.

2. Review of labels for the end-use products registered to Novartis reveals several label revisions needed to comply with reregistration requirements. These label revisions are discussed in detail under "Summary of Science Findings, OPPTS GLN 860.1200."

3. CBRS No. XXXXX, DP Barcode D223286, X/X/97, L. Cheng,

4. Method AG-550 must be radiovalidated using metabolism study samples.

5. Storage stability data are being generated to support processing studies and animal feeding studies. Storage stability data are required to support the proposed diazoxon field trials.

6. CBRS No. 10855, DP Barcode D184571, 2/7/96, S. Funk.

7. CBRS No. 10076, DP Barcode D179064, 9/22/92, D. McNeilly.

8. CBRS Nos. 10849/11246, DP Barcode D186327/184573, 4/26/93, R. Perfetti.

(continued; footnotes follow)

Table B *(continued)*.

9. CBRS No. 16939, DP Barcode D223271, 6/4/96, S. Funk.

10. The registrant intends to propose a Crop Sub-group 1B tolerance (root vegetables except sugar beets) supported by data on carrots and radishes. HED recommends crop group tolerance of 0.75 ppm.

11. The registrant is conducting the required three additional field trials on sugar beets in Regions 9 and 11 reflecting preplant and foliar applications. EC and G formulations are to be used for preplant applications (separate tests) and EC and WP formulations are to be used for foliar applications. The PHI is 14 days.

12. Data will be translated from potatoes to sweet potatoes; a crop group tolerance for residues in/on tuberous and corm vegetables would be appropriate.

13. The registrant intends to propose a Crop Group 2 tolerance (leaves of root and tuber vegetables) supported by data on turnip tops and sugar beet tops. Residue data still pending.

14. The registrant has conducted three trials on celery with the 14% G in Regions 3, 5, and 10; report to be submitted. Five additional trials are required in Regions 3 (1) and 10 (4 trials).

15. The registrant intends to propose a Crop Group 4-A tolerance (leafy vegetables except brassica) supported by data on head and leaf lettuce and spinach. Confirmatory data on for the lettuce metabolism pending. Residue data from field trials still pending for spinach, celery, and Swiss chard.

16. Data are required on spinach, one trial each in Regions 1, 2, 6, 9, and 10, reflecting preplant application of the EC and five foliar applications of the EC or WP at 0.5 lb ai/A, with a 10-day PHI.

17. The registrant intends to conduct three trials on Swiss Chard reflecting preplant (14% G and EC) and foliar applications (WP and EC formulations).

18. The registrant is conducting eight trials on lima beans in Regions 2, 5, 10, and 11 including preplant (G and EC) and foliar (EC and WP formulations) applications. AG500 and 50W must be represented in foliar portion of the studies.

19. The registrant is not supporting this use; cowpeas should be deleted from the product labels.

20. The registrant is not supporting the use on dry peas; IR-4 intends to support this use. Data requirements for succulent peas are satisfied.

21. The registrant is not supporting a use on soybeans.

22. Foliage commodities of legume vegetables, with the exceptions of cowpea forage and hay, field pea vines and hay, and soybean forage and hay, are no longer considered to be significant livestock feed items. The registrant is not supporting uses on cowpeas, dried peas, or soybeans.

23. The registrant intends to propose a crop group tolerance for cucurbit vegetables (Group 9) supported by data on cucumbers (new trial conducted in Region 5), muskmelon, and summer squash. Residue data on cucumbers still pending.

24. The registrant is not supporting a use on any citrus fruit.

Table B *(continued)*.

25. An additional six field trials on blueberries are required in Region 1, Region 2 (2 trials), Region 5 (2 trials), and Region 12. The EC and WP formulations must be tested in all locations and side-by-side tests are recommended (CBRS No. 17428, DP Barcode D227245, 9/10/96, S. Funk).

26. CBRS No. 17428, DP Barcode D227245, 9/10/96, S. Funk.

27. The registrant is not supporting uses on filberts or pecans. However, IR-4 is supporting use on filberts.

28. The registrant is not supporting a use on sorghum.

29. The registrant is not supporting a use on grass.

30. The registrant is not supporting use on any non-grass animal feed crop.

31. CBRS No. 10848, DP Barcode D184439, 12/21/92, M. Rodriguez.

32. The registrant is not supporting a use on coffee.

33. The registrant is not supporting a use on cotton.

34. The registrant is not supporting a use on figs. IR-4 has submitted adequate field trial data in support of use on figs.

35. Additional data are required reflecting use of the EC formulation on hops.

36. The registrant is not supporting a use on kiwi fruit.

37. The registrant is not supporting a use on olives.

38. The registrant is not supporting a use on peanuts.

39. CBRS No. 9415, DP Barcode D174774, 6/3/92, P. Deschamp.

40. The registrant is not supporting a use on sugarcane.

41. IR-4 has submitted data from one field trial in Hawaii. The 1996 DCI required 2 trials, but HED accepts these data as adequate for the requested 24(c) SLN registration in HI only. The data have been reviewed and are adequate to support a reassessed tolerance of 0.05 ppm. DP Barcode 245328, 7/13/99, S.Levy.

42. The registrant is not supporting a use on the RAC.

43. CBRS No. 16940, DP Barcode D223318, 6/4/96, S. Funk.

44. DP Barcode D234509, 3/31/98, D. Hrdy/DP Barcode D224090, 2/24/98, D. Hrdy.

45. The registrant will impose a label restriction that will preclude the need for data on residue dissipation in water (CBRS No. 17296, DP Barcode D226070, 7/15/96, S. Funk).

46. CBRS No. 14264, DP Barcode D206931, 2/8/96, S. Funk.

Table B *(continued)*.

47. Limited field trials are required using a root and tuber vegetable, a leafy vegetable, and a cereal grain crop, at two sites per crop, for a total of six trials (CBRS No. 14264, DP Barcode D206931, 2/8/96, S. Funk).

TOLERANCE REASSESSMENT SUMMARY

Tolerances are established for residues of diazinon, including hydroxy diazinon and diazoxon in/on plant and animal commodities. The tolerance level for each commodity is expressed in terms of the parent only which serves as indicator of the use of diazinon on these raw agricultural commodities [40 CFR §180.153 (a), (b) and (c)]. The nature of the residue of diazinon in plants and animals is understood. The HED Metabolism Committee has determined that the residues of concern in plants and animals are diazinon, hydroxy diazinon, and diazoxon. For enforcement purposes, diazinon, *per se* will be included in the tolerance expression. However, residues of diazinon, and its metabolites, hydroxy diazinon and diazoxon, will be included in dietary risk assessment. Both of these metabolites are considered to be cholinesterase inhibitors. A summary of the diazinon tolerance reassessment and recommended modifications in commodity definitions are presented in Table C.

Tolerances Listed Under 40 CFR §180.153 (a)(1), (b), and (c):

Sufficient data are available to assess tolerances (as currently defined) for diazinon residues in/on almonds (use in California only), apples, beans (snap), brassica leafy vegetables, blackberries, boysenberries, carrots, cherries, corn (sweet), cranberries, figs, grapes, lettuce, mushrooms, nectarines, peaches, pears, peas (succulent), peppers (bell), peppers, plums, onions, pineapples, potatoes, radish/Chinese radish, squash, strawberries, tomatoes, turnips (roots and tops), walnuts (use in California only), and watercress.

Additional residue data as outlined in Table C are required on lima beans, blueberries, celery, cucumbers, hops, dried peas (IR-4), spinach, Swiss chard, and sugar beets (roots and tops) before these specific tolerances can be reassessed. Once residue data on these representative crops has been received and reviewed, sufficient data should be available to support tolerance reassessment for the crops listed above and the following crops: beet tops (garden), chicory, endive, melons, parsley, and squash. Alternatively, once the residue data for the above-listed crops has been submitted and reviewed, if any interested party wishes to support additional crop uses within a crop grouping, sufficient residue data should be available to support crop group tolerances.

Individual tolerances are established and have been reassessed at 0.75 ppm for carrots, garden beets, ginseng, and rutabagas, and at 0.5 ppm for radishes, parsnip, and turnip roots. Individual tolerances are established and have been reassessed at 0.1 ppm for potatoes and sweet potatoes. Individual tolerances are established and have been reassessed at 0.75 ppm to cover tomatoes, and 0.5 ppm to cover peppers. Individual tolerances are established and have been reassessed at 0.5 ppm to cover apples and pears. Individual tolerances are established at 0.5 ppm for apricots, nectarines, and plums, and at 0.75 ppm for cherries, and at 0.70 ppm for peaches. The reassessed tolerance for each of these crops is 0.2 ppm. (See Table C)

Tolerances have not been reassessed for the following crops because of outstanding residue data on a representative crop as noted by the asterisk(*): turnip tops, sugar beets tops*, radish tops, and chicory (members of Crop Group (2) Leaves of Root and Tuber Vegetables); spinach*, parsley, celery*, Swiss chard*, dandelion, lettuce, and endive (members of Crop Group (4) Leafy Vegetables); and cucumber*, melons, and squash (members of Crop Group (9) Cucurbit Vegetables). Once residue data are submitted on the noted representative crops, tolerances for these crops can be reassessed.

Tolerances for apricots, cherries, nectarines, peaches, plums, figs, sweet corn (K + CWHR), sweet corn, forage, and watercress have been reassessed. Tolerances for cattle (meat, fat, and meat byproducts), and sheep (meat, fat, and meat byproducts) have been reassessed.

The registrant is not supporting uses on the following crops: alfalfa, citrus fruits, clover, coffee, cottonseed, grasses, olives, peanuts, pecans, sorghum, soybeans, or sugarcane. Once it is determined that no other interested party wishes to support these uses, tolerances for residues in/on commodities from these crops should be revoked.

Tolerances Needed Under 40 CFR §180.153 (a) (1):

Tolerances are needed on dried figs, at 0.3 ppm and dried sugar beet pulp at a level to be determined pending submission and review of required residue data.

Tolerances Needed Under 40 CFR §180.153 (a)(2) & (3):

The data reviewed in the 1992 Reregistration Standard Update indicate that tolerances of 0.02 ppm should be established for residues in food and feed resulting from use of diazinon in food and feed handling establishments.

Table C. Tolerance Reassessment Summary for Diazinon.

Commodity	Current Tolerance (ppm)	Tolerance Reassessment (ppm)	Comment/*Correct Commodity Definition*
Tolerances listed under 40 CFR §180.153(a)(1):			
Alfalfa, Fresh	40.0	Revoke	Use not supported
Alfalfa, Hay	10.0	Revoke	Use not supported
Almonds	0.5	0.5	Use in California only
Almonds, Hulls	3.0	3.0	Use in California only
Apples	0.5	0.5	
Apricots	0.5	0.2	
Bananas	0.2	0.2	

(continued; footnotes follow)

Table C *(continued)*.

Commodity	Current Tolerance (ppm)	Tolerance Reassessment (ppm)	Comment/*Correct Commodity Definition*
Bananas, Pulp	0.1	Revoke	
Beans, Forage	25.0	Revoke	Not a significant livestock feed item.
Beans, Guar	0.1	Revoke	Use not supported
Beans, Guar, Forage	0.1	Revoke	Not a significant livestock feed item.
Beans, Hay	10.0	Revoke	Not a significant livestock feed item.
Beans, Lima	0.5	TBD	Additional residue data are required
Beans, Snap	0.5	0.5	
Beets, Roots	0.75	0.75	
Beets, Sugar, Roots	0.5	TBD	Additional residue data are required
Beets, Sugar, Tops	10.0	TBD	Additional residue data are required.
Beets, Tops	0.7	TBD	Tolerance can be reassessed once residue data on the representative crop has been submitted.
Blackberries Boysenberries Dewberries Loganberries Raspberries	0.5 0.5 0.5 0.75 0.5	0.75	*Caneberries*
Blueberries	0.5	TBD	Additional data required.
Brassica (Cole) Leafy Vegetables	0.7	0.7	
Carrots	0.75	0.75	
Cattle, Fat (Pre-S)	0.7	0.5	Tolerance reassessment based on MRIDs 45233501, 45233502, 45233503, and 45233504**.** *Cattle, fat*
Cattle, MBYP (Fat Basis)	0.7	Revoke	Category 180.6(a)3 applies. “No reasonable expectation of finite residues”.

(continued; footnotes follow)

Table C *(continued)*.

Commodity	Current Tolerance (ppm)	Tolerance Reassessment (ppm)	Comment/*Correct Commodity Definition*
Cattle, Meat (Fat Basis)	0.7	Revoke	Category 180.6(a)3 applies. "No reasonable expectation of finite residues".
Celery	0.7	TBD	Additional residue data are required.
Cherries	0.75	0.2	
Chicory, Red (Tops) (Radicchio)	0.7	TBD	Tolerance can be reassessed once residue data on the representative crop has been submitted.
Citrus Fruits	0.7	Revoke	Use not supported
Clover, Fresh	40.0	Revoke	Use not supported
Clover, Hay	10.0	Revoke	Use not supported
Coffee Beans	0.2	Revoke	Use not supported
Corn (Sweet) (K+CWHR)	0.7	0.05	*Corn, sweet (K+CWHR)*. Tolerance reassessment based on MRID 41336505.
Corn, Forage	40.0	10.0	Tolerance reassessment based on MRID 41336505.
Cotton, Seed	0.2	Revoke	Use not supported
Cowpeas	0.1	Revoke	Use not supported
Cowpeas, Forage	0.1	Revoke	Use not supported
Cranberries	0.5	0.5	
Cucumbers	0.75	TBD	Additional residue data are required.
Dandelions	0.7	TBD	Tolerance can be reassessed once residue data on the representative crop has been submitted.
Endive (Escarole)	0.7	TBD	Tolerance can be reassessed once residue data on the representative crop has been submitted.
Figs, fresh	0.5	0.1	Based on MRID 44726801.
Filberts	0.5	TBD	Use supported by IR-4
Ginseng	0.75	0.75	
Grapes	0.75	0.75	

(continued; footnotes follow)

Table C *(continued)*.

Commodity	Current Tolerance (ppm)	Tolerance Reassessment (ppm)	Comment/*Correct Commodity Definition*
Grasses	60.0	Revoke	Use not supported
Grasses, Hay	10.0	Revoke	Use not supported
Hops	0.75	TBD	Additional data are required *Hops, dried*
Kiwi fruits	0.75	0.75	Import use supported
Lespedeza	1.0	Revoke	Use not supported
Lettuce	0.7	TBD	Tolerance can be reassessed once residue data on the representative crop has been submitted.
Melons	0.75	TBD	Tolerance can be reassessed once residue data on the representative crop has been submitted.
Mushrooms	0.75	0.75	
Nectarines	0.5	0.2	
Olives	1.0	Revoke	Use not supported
Onions	0.75	0.75	
Parsley	0.75	TBD	Tolerance can be reassessed once residue data on the representative crop has been submitted.
Parsnips	0.5	0.5	
Peaches	0.7	0.2	
Peanuts	0.75	Revoke	Use not supported
Peanuts, Forage	40.0	Revoke	Use not supported
Peanuts, Hay	10.0	Revoke	Use not supported
Peanuts, Hulls	10.0	Revoke	Use not supported
Pears	0.5	0.5	
Peas (Shell Removed)	0.5	TBD	Additional data are required. *Peas, succulent*
Peas, Vines	25.0	Revoke	Not a significant livestock feed item
Peas, Vines, Hay	10.0	Revoke	Not a significant livestock feed item
Pecans	0.5	Revoke	Use not supported

(continued; footnotes follow)

Table C *(continued)*.

Commodity	Current Tolerance (ppm)	Tolerance Reassessment (ppm)	Comment/*Correct Commodity Definition*
Peppers	0.5	0.5	
Pineapples	0.5	0.5	
Pineapples, Forage	40.0	Revoke	Not a significant livestock feed item
Plums (Fresh Prunes)	0.5	0.2	
Potatoes	0.1	0.1	
Radishes	0.5	0.5	
Rutabagas	0.75	0.75	
Sheep, Fat (Pre-S)	0.7	5.0	Tolerance reassessment based on MRID 44231901.
Sheep, MBYP (Fat Basis)	0.7	0.7	Tolerance reassessment based on MRID 44231901.
Sheep, Meat (Fat Basis)	0.7	0.7	Tolerance reassessment based on MRID 44231901.
Sorghum, Forage	10.0	Revoke	Use not supported
Sorghum, Grain	0.75	Revoke	Use not supported
Soybeans	0.1	Revoke	Use not supported
Soybeans, Forage	0.1	Revoke	Use not supported
Spinach	0.7	TBD	Additional residue data are required.
Squash, Summer	0.5	TBD	Tolerance can be reassessed once residue data on the representative crop has been submitted.
Squash, Winter	0.75	TBD	Tolerance can be reassessed once residue data on the representative crop has been submitted.
Strawberries	0.5	0.5	
Sugarcane	0.75	Revoke	Use not supported
Sweet Potatoes	0.1	0.1	
Swiss Chard	0.7	TBD	Additional data are required.
Tomatoes	0.75	0.75	

(continued; footnotes follow)

Table C *(continued)*.

Commodity	Current Tolerance (ppm)	Tolerance Reassessment (ppm)	Comment/*Correct Commodity Definition*
Trefoil, Birdsfoot	40.0	Revoke	Use not supported
Trefoil, Birdsfoot, Hay	10.0	Revoke	Use not supported
Turnips, Roots	0.5	0.5	
Turnips, Tops	0.75	TBD	Tolerance can be reassessed once residue data on the representative crop has been submitted.
Walnuts	0.5	0.5	Use in California only
Watercress	0.7	0.05	Tolerance reassessment based on IR-4 data contained in MRID 44237101.
Tolerances needed under 40 CFR §180.153(a)(1):			
Figs, dried	None	0.3	Data supporting a dried fig tolerance was submitted from IR-4.
Sugar beet, dried pulp	None	TBD	Additional data are required on the RAC.
Tolerances listed under 40 CFR §180.153 (a)(2) & 180.153 (a)(3):			
Food-handling establishments	No level specified	0.02	Based on label restrictions and residue data there is no likelihood of residues on food.
Feed-handling establishments	No level specified	0.02	Based on label restrictions and residue data there is no likelihood of residues on food.
Tolerances listed under 40 CFR §180.153(c):			
Radish, Chinese (Roots)	0.1	0.75	
Radish, (Chinese (Tops)	0.1	TBD	Tolerance can be reassessed once residue data on the representative crop has been submitted.

[a] TBD = To be determined. Tolerance cannot be determined at this time because additional data are required on a representative crop.

(continued; footnotes follow)

CODEX HARMONIZATION

The Codex Alimentarius Commission has established maximum residue limits (MRLs) for diazinon residues in/on various plant and animal commodities (see *Guide to Codex Maximum Limits For Pesticide Residues, Part A.1, 1995*). The Codex MRLs and reassessed U.S. tolerances (except where noted by an asterisk *) are currently expressed in terms of diazinon *per se*. After the Agency determines the compounds to be regulated, all U.S. tolerances will be reassessed and the potential for compatibility with the Codex MRLs will be determined. A comparison of the Codex MRLs and the current corresponding U.S. tolerances is presented in Table D.

Table D. Codex MRLs for diazinon and applicable U.S. tolerances.

Codex			U.S. Tolerance (ppm)	Recommendation and Comments
Commodity (As Defined)	MRL (mg/kg)	Step		
Almond hulls	5	CXL	3.0	
Almonds	0.05	CXL	0.5	
Blackberries	0.1	8	0.75	
Boysenberry	0.1	8	0.75	
Broccoli	0.5	8	0.7	
Cabbages. Head	2	8	0.7	
Cantaloupe	0.2	8	0.75*	
Carrot	0.5	8	0.75	
Cherries	1	8	0.2	
Chicken eggs	0.02*	3	None	
Chicken meat	0.02*	3	None	
Chicken, Edible offal of	0.02*	3	None	
Chinese cabbage (type peisai)	0.05	8(a)	0.7	
Common bean (pods and/or immature seeds)	0.2	8	0.5	
Cucumber	0.1	8	TBD	
Currants, Black, Red, White	0.2	8	None	

(continued; footnotes follow)

Table D *(continued)*.

Codex			U.S. Tolerance (ppm)	Recommendation and Comments
Commodity (As Defined)	MRL (mg/kg)	Step		
Fruits (except as otherwise listed) [a]	0.5	CXL	0.2-0.75	
Garden Pea, Shelled	0.2	8	0.5*	
Goat meat	2	3	None	
Hops, Dry	0.5	5/8	TBD	
Kale	0.05	CXL	0.7*	
Kidney of cattle, goats, pigs & sheep	0.03	3	0.7 (sheep only)	
Kiwi fruit	0.2	8	0.75	
Kohlrabi	0.2	8	0.7*	
Leafy vegetables [b, c]	0.7	CXL-D	TBD	
Lettuce, Head	0.5	8(a)	TBD	
Lettuce, Leaf	0.5	8(a)	TBD	
Liver of cattle, goats, pigs & sheep	0.03	3	0.7 (sheep only)	
Maize	0.02	CXL	0.05	Considered equivalent to corn
Maize forage [d]	10	CXL	10.0	
Meat of cattle, pigs & sheep [a, e]	0.7	CXL	0.7 (sheep only)	
Meat of cattle, pigs & sheep	2	3(a)	0.7 (sheep only)	
Milks	0.02	CXL	None	
Onion, Bulb	0.05	CXL	0.75	
Peach	0.7	CXL-D	0.2	
Peach	0.2	8(a)	0.2	
Peppers, Sweet	0.05	CXL	0.75	
Pineapple	0.1	8	0.5	
Plums (including prunes)	1	8	0.2	

(continued; footnotes follow)

Table D *(continued)*.

Codex			U.S. Tolerance (ppm)	Recommendation and Comments
Commodity (As Defined)	MRL (mg/kg)	Step		
Pome fruits	2	7C	0.5	
Potato	0.01	CXL	0.1	
Prunes (fresh)	2	8	0.2	Covered by plums
Radish	0.1	8	0.75	
Raspberries, red, black	0.2	8	0.75	
Spinach	0.5	8(a)	0.7*	
Spring onion	1	8	None	
Squash, summer	0.05	8	0.5*	
Strawberry	0.1	8	0.5	
Sugar beet	0.1	CXL	0.5*	
Sugar beet leaves or tops	5	CXL	10.0*	
Sweet corn (corn on the cob)	0.02	CXL	0.05	
Tomato	0.5	8	0.75	
Vegetables (except as otherwise listed)	0.5	CXL-D	0.1-0.75	
Walnuts	0.01	CXL	0.5	

[a] Withdrawal recommended (1993 JMPR). [b] To be replaced by MRLs for individual leafy vegetables. [c] Except kale. [d] The Committee noted that animal feeding studies would be reviewed by JMPR in 1996 (27.75). [e] The Committee decided to retain the CXLs until new data on animal feeding trials were reviewed by the 1996 JMPR. Data have been provided (27.26). [f] 1996 JMPR proposed a new MRL at the same level as the current Codex MRL (previous proposal was to withdraw (1993 JMPR). * Tolerances that have not been reassessed.

DIETARY EXPOSURE ASSESSMENT SUMMARY

For the purposes of the dietary exposure and risk assessment for diazinon, the metabolites diazoxon, and hydroxy diazinon will be included in future dietary risk assessments. A previous dietary risk assessment for acute exposures to diazinon was based on an acute Population Adjusted Dose (PAD) of 0.0025 mg/kg/day, tolerance level residues and assumed that 100% of a crop included in the assessment was treated (B. Steinwand, 4/24/98, D245094). This was a highly conservative analysis, but did not include residues from diazoxon or hydroxy diazinon. The previous dietary risk assessment for chronic exposures to diazinon was based on a chronic Population Adjusted Dose (PAD) of 0.0007 mg/kg/day, anticipated residues which included percentage of crop that was treated (B. Steinwand, 4/24/98, D245094). The chronic analysis was a more refined analysis that did include residues for cattle meat, fat, milk, and meat byproducts, which have been recommended for a classification of 180.6(a)3, "no reasonable expectation of finite residues". The analysis did not include residues from diazoxon or hydroxy diazinon.

Results of the previous acute dietary analyses for diazinon indicate that a more refined dietary assessment is needed for the acute dietary exposure assessment using a probabilistic treatment of monitoring data. The chronic PAD has been reassessed and lowered, and is now 0.0002 mg/kg/day . Based on reassessed tolerances for animal feed items and livestock dermal treatments, and the resultant revocations in feed tolerances, several animal commodities have been classified as Category 180.6(a)3 with "no expectation of finite residues". Specifically, all poultry and ruminant tissues (with the exception of sheep meat, fat, and meat byproducts based on a sheep dermal use and cattle fat based on cattle ear tag use) have been classified as 180.6(a)3 and should be excluded from the dietary risk assessment.

Because there is a food/feed handling establishment use for diazinon, which qualifies as a food use, a tolerance for this use must be established and has been recommended at 0.02 ppm. However, based on data submitted to support a food additive petition and associated label restrictions on commercial applicators applying diazinon in food/feed handling establishments, there is no likelihood of residues in food or feed provided label directions are followed. Results from a study designed to test for residues of diazinon on food and feed items, covered and uncovered, as a result of a 1X and 2X labeled application rate in food/feed handling establishments showed that residues were non-detectable (<0.01 ppm) for diazinon, hydroxy diazinon, and diazoxon. It is recommended that the dietary risk assessment for diazinon be conducted including potential residues from the food/feed handling establishment use at ½ the limit of detection (0.005 ppm) for diazinon, hydroxy diazinon, and diazoxon, each, and assuming the non-detectable residues are zero (as per TRAC Science Policy paper entitled, "Assigning Values to Nondetected/Nonquantified Pesticide Residues in Human Health Dietary Exposure Assessments", draft 11/30/98).

AGENCY MEMORANDA CITED IN THIS DOCUMENT

CBRS No.: 9415
DP Barcode: D174774
Subject: Reregistration of Diazinon. Magnitude of the Residue in Pineapples and Processed Commodities
From: P. Deschamp, CBRS
To: L. Rossi, SRRD
Date: 6/3/92
MRID(s): 42179501

CBRS No.: 10076
DP Barcode: D179064
Subject: Reregistration of Diazinon. Residue and storage stability data pertaining to bananas, mushrooms, and kiwi fruit.
From: D. McNeilly, SRRD
To: R. Richards, SRRD
Date: 9/22/92
MRID(s): 42322401, -02, -03

CBRS No.: 10848
DP Barcode: D184439
Subject: HI920006: Special Local Need - 24 (c) - For Use of Diazinon in/on Bananas in the State of Hawaii.
From: M. Rodriguez, CBTS
To: G. Larocca, RD
Date: 12/21/92
MRID(s): 42527001

CBRS No.: 10849/11246
DP Barcode: D186327/D184573
Subject: Response to the Diazinon Reregistration Standard
From: R. Perfetti, CBRS
To: L. Rossi, SRRD
Date: 4/26/93
MRID(s): 42521201, -02, -03, 42604901

CBRS No.: 11670
DP Barcode: D189573
Subject: Diazinon. Ciba-Geigy 6 (a)(2) Data for Stone Fruit, Processed Commodities, and Prepared Commodities.
From: S. Funk, CBRS
To: L. Rossi, SRRD
Date: 5/24/93
MRID(s):

CBRS No.: 10855
DP Barcode: D184571
Subject: Diazinon. Storage Stability Studies for Plant RACs and Processed Commodities
From: S. Funk, CBRS
To: J. McQueen, SRRD
Date: 2/7/96
MRID(s): 41867001, 42522901

CBRS No.: 14264
DP Barcode: D206931
Subject: Diazinon. Confined and Field Rotational Crops Studies.
From: S. Funk, CBRS
To: J. McQueen, SRRD
Date: 2/8/96
MRID(s): 41618601, 41618603

CBRS No.: 16940
DP Barcode: D223318
Subject: Diazinon. SLN 24(c) CA830017. Registration of Diazinon on Prunes in California.
From: S. Willett, CBTS
To: G. LaRocca, RD
Date: 3/7/93
MRID(s): None

CBRS No.: 16940
DP Barcode: D223318
Subject: Diazinon. Magnitude of the Residue in Poultry and Eggs
From: S. Funk, CBRS
To: P. Deschamp, RCAB
Date: 6/4/96
MRID(s): 43828001

CBRS No.: 16939
DP Barcode: D223271
Subject: Diazinon. Storage Stability in/on Pineapple.
From: S. Funk, CBRS
To: P. Deschamp, RCAB
Date: 6/4/96
MRID(s): 43909401

CBRS No.: 17296
DP Barcode: D226070
Subject: Diazinon. Residue Chemistry: Cranberries and Watercress.
From: S. Funk, CBRS
To: P. Deschamp, RCAB
Date: 7/15/96
MRID(s): None.

CBRS No.: 17507
DP Barcode: D228959
Subject: Diazinon. Ciba-Geigy Response to the 1996 DCI.
From: S. Funk, CBRS
To: P. Deschamp, RCAB
Date: 8/29/96
MRID(s): None.

CBRS No.: 17428
DP Barcode: D227245
Subject: Diazinon. Magnitude of the Residue on Blueberries.
From: S. Funk, CBRS
To: P. Deschamp, RCAB
Date: 9/10/96
MRID(s): 42222701

DP Barcode: D243745
Subject: Diazinon. HED Metabolism Committee Issues Memorandum.
From: D. Hrdy, CEB 2
To: HED Metabolism Committee
Date: 02/27/98
MRID: None

DP Barcode: D244848
Subject: Diazinon. HED Metabolism Committee Decision Memorandum.
From: D. Hrdy, CEB 2
To: HED Metabolism Committee
Date: 04/17/98
MRID: None

DP Barcode: D224090
Subject: Diazinon. Magnitude of the Residue in Cattle.
From: D. Hrdy, CEB 2
To: Jose Morales, RRB 3
Date: 02/24/98
MRID: 43274402

DP Barcode: D234509
Subject: Diazinon. Magnitude of the Residue in Sheep.
From: D. Hrdy, CEB I
To: Jose Morales, RRB 3
Date: 03/31/98
MRID: 44231901

DP Barcode: D258893
Subject: Diazinon. Tolerance Reassessment in Sweet Corn and Forage, and Cattle Tissues and Milk.
From: C. Eiden, RRB 3
To: B. Chambliss
Date: 08/23/99
MRID: 41336505

DP Barcode: D258911
Subject: Diazinon. Tolerance Reassessment for Sheep Tissues.
From: C. Eiden, RRB 3
To: B. Chambliss
Date: 08/23/99
MRID: 44231901

DP Barcode: D245328
Subject: Diazinon. Magnitude of the Residue and Tolerance Reassessment in Watercress.
From: S. Levy, RRB 3
To: B. Chambliss

Date: 07/13/99
MRID: 44237101

DP Barcode: D258002
Subject: Diazinon. Magnitude of the Residue and Tolerance Reassessment in Figs.
From: D. Drew, RRB 3
To: B. Chambliss
Date: 08/12/99
MRID: 44726801

DP Barcode: D255005
Subject: OP Pesticide with MMPE Tolerances.
From: G. Herndon, RAB 2
To: D. Helfgott
Date: 04/08/99
MRID: None

DP Barcode: D269463
Subject: Diazinon: Reassessed Tolerances for Cattle Tissues as a Result of Cattle Ear Tag Use.
From: D.Drew, RRB3
To: B. Chambliss
Date: 04/08/99
MRID: 45233501, 45233502, 45233503, and 45233504.

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Bibliographic citations include only MRIDs containing data which fulfill data requirements.

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ATTACHMENT 1

Table A. Food/Feed Use Patterns Subject To Reregistration For Diazinon.

TABLE A. FOOD/FEED USE PATTERNS SUBJECT TO REREGISTRATION FOR DIAZINON (CASE 0238).

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Max. Single Application Rate (ai)	Max. # Apps. [a]	Minimum Retreatment Interval (Days)	Use Limitations [b]
Food/Feed Crop Uses					
Almonds (only in CA)					
Broadcast dormant application Ground and aerial equipment	50% WP [100-460] 4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	3 lb/A	1	Not applicable (NA)	A PHI is not specified. Do not apply more than 3 lb ai/A/season. Apply in a minimum of 20 gal/A of water using either ground or aerial equipment. For each 100 gallons of water, add 2-3 gallons of dormant oil or 1-1.5 gallons of superior type oil to a maximum of 9 gallons of oil/A.
Apples					
Broadcast dormant application Ground or aerial equipment	50% WP [100-460] 4.5 lb/gal SCl [100-784]	2 lb/A	Not specified (NS)	14	A 21-day PHI is specified. Do not apply more than 6 lb ai/A/season. Apply in a minimum of 20 gal/A of water using either ground or aerial equipment. For dormant applications only, 2 gallons of dormant oil or 1-1.5 gallons of superior type oil may be added for each 100 gallons of water used to a maximum of 6 gallons of oil/A.
Broadcast foliar application Ground or aerial equipment		0.5 lb/A	3	14	

(*continued; footnotes follow*)

Table A. Continued.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Max. Single Application Rate (ai)	Max. # Apps. [a]	Minimum Retreatment Interval (Days)	Use Limitations [b]
Apricots					
Broadcast foliar application Ground or aerial equipment	50% WP [100-460] 4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	2 lb/A	NS	14	A 21-day PHI is specified. Do not apply more than 6 lb ai/A/season. Apply in a minimum of 20 gal/A using either ground or aerial equipment. For each 100 gallons of water, 1.5 gallons of medium horticultural oil can be used.
Beans (Lima, Pole, and Snap, succulent only)					
Broadcast pre-plant soil incorporated Ground and aerial equipment	50% WP [100-460] 4 lb/gal EC [100-461] 4 lb/gal SCl [100-784]	4 lb/A	1	NA	A 7-day PHI is specified. Do not apply more than 6.5 lb ai/A/season. Apply in a minimum of 10 gal/A of water using ground equipment or 5 gal/A using aerial equipment. Forage and hay may be fed to dairy and beef cattle and sheep; a 4-day PHI for forage is specified if it is to be cut for hay.
Broadcast foliar application Ground and aerial equipment		0.75 lb/A	3	5	
Broadcast pre-plant soil incorporated Ground equipment	14% G [100-469]	4 lb/A	1	NA	No PHI is specified. Do not apply more than 4 lb ai/A/season.
Seed treatment	50% WP [100-460]	0.25 oz/bushel	1	NA	No PHI is specified. Treat immediately prior to planting and do not store excess treated seed beyond planting time. Treated seed must not be used for or mixed with food or animal feed or processed for oil.

(*continued; footnotes follow*)

Table A. Continued.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Max. Single Application Rate (ai)	Max. # Apps. [a]	Minimum Retreatment Interval (Days)	Use Limitations [b]
Beets, Red					
Broadcast pre-plant soil incorporated Ground and aerial equipment	50% WP [100-460] 4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	4 lb/A	1	NA	A 14-day PHI is specified. Do not apply more than 6.5 lb ai/A/season. Apply in a minimum of 10 gal/A of water using ground equipment or 5 gal/A using aerial equipment.
Broadcast foliar application Ground and aerial equipment		0.5 lb/A	5	7	
Broadcast pre-plant soil incorporated Ground equipment	14% G [100-469]	4 lb/A	1	NA	No PHI is specified. Do not apply more than 4 lb ai/A/season.
Blueberries					
Broadcast foliar application Ground or aerial equipment	4 lb/gal EC [100-461]	0.5 lb/A	NS	14	A 7-day PHI is specified. Do not apply more than 1 lb ai/A/season. Apply in a minimum of 20 gal/A using either ground or aerial equipment.
Broadcast foliar application Ground or aerial equipment	4.5 lb/gal SCl [100-784]	1 lb/A	NS	14	A 7-day PHI is specified. Do not apply more than 5 lb ai/A/season. Apply in a minimum of 20 gal/A using either ground or aerial equipment.
Broccoli					
Broadcast pre-plant soil incorporated Ground and aerial equipment	50% WP [100-460] 4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	4 lb/A	1	NA	A 7-day PHI is specified. A maximum seasonal application rate is not defined. Apply in a minimum of 10 gal/A of water using ground equipment or 5 gal/A using aerial equipment.
Soil drench at transplanting		1.5 lb/A	1	NA	
Broadcast foliar application Ground and aerial equipment		0.5 lb/A	5	7	
Broadcast pre-plant soil incorporated Ground equipment	14% G [100-469]	4 lb/A	1	NA	No PHI is specified. Do not apply more than 4 lb ai/A/season.

(*continued; footnotes follow*)

Table A. Continued.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Max. Single Application Rate (ai)	Max. # Apps. [a]	Minimum Retreatment Interval (Days)	Use Limitations [b]
Brussels Sprouts					
Broadcast pre-plant soil incorporated Ground and aerial equipment	50% WP [100-460] 4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	4 lb/A	1	NA	A 7-day PHI is specified. A maximum seasonal rate is not specified. Apply in a minimum of 10 gal/A of water using ground equipment or 5 gal/A using aerial equipment.
Soil drench at transplanting		1.5 lb/A	1	NA	
Broadcast foliar application Ground and aerial equipment		0.5 lb/A	5	7	
Broadcast pre-plant soil incorporated Ground equipment	14% G [100-469]	4 lb/A	1	NA	Do not apply more than 4 lb ai/A/season.
Cabbage					
Broadcast pre-plant soil incorporated Ground equipment	50% WP [100-460] 4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	4 lb/A	1	NA	A 21-day PHI is specified. A maximum seasonal application rate is not specified. Apply in a minimum of 10 gal/A of water using ground equipment or 5 gal/A using aerial equipment.
Soil drench at transplanting		1.5 lb/A	1	NA	
Broadcast foliar application Ground and aerial equipment		0.5 lb/A	5	7	
Broadcast pre-plant soil incorporated Ground equipment	14% G [100-469]	4 lb/A	1	NA	Do not apply more than 4 lb ai/A/season.

(*continued; footnotes follow*)

Table A. Continued.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Max. Single Application Rate (ai)	Max. # Apps. [a]	Minimum Retreatment Interval (Days)	Use Limitations [b]
Caneberries (Blackberries, Boysenberries, Dewberries, Loganberries, Raspberries) (only in CA, OR, and WA)					
Broadcast dormant application Ground or aerial equipment	50% WP [100-460] 4 lb/gal EC [100-461]	2 lb/A	2	NS	A 7-day PHI is specified. For the higher application rate (2 lb/A), make the first application as a dormant spray and the second when the buds are still closed. A 9 lb ai/A/season maximum use rate is implied. For use only in CA, OR, or WA. Twenty and 100 gal/A minimum application volumes are specified on both labels using either ground or aerial equipment.
Broadcast foliar application Ground or aerial equipment		1 lb/A	5	14	
Broadcast dormant or foliar application Ground equipment	4.5 lb/gal SCl [100-784]	2 lb/A	NS	14	A 7-day PHI is specified. Make the first application as a dormant spray and the second when the buds are still closed. Do not apply more than 5 lb ai/A/season. For use only in CA, OR, or WA. Twenty and 100 gal/A minimum application volumes are specified using either ground or aerial equipment.

(*continued; footnotes follow*)

Table A. Continued.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Max. Single Application Rate (ai)	Max. # Apps. [a]	Minimum Retreatment Interval (Days)	Use Limitations [b]
Carrots					
Broadcast pre-plant soil incorporated Ground equipment	50% WP [100-460]	4 lb/A	1	NA	A 21-day PHI is specified. A maximum seasonal application rate is not specified. Apply in a minimum of 10 gal/A of water using ground equipment or 5 gal/A using aerial equipment.
Soil drench at transplanting		2 lb/A	1	NA	
Broadcast foliar application Ground and aerial equipment		0.5 lb/A	5	7	
Broadcast pre-plant soil incorporated Ground equipment	4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	4 lb/A	1	NA	A 14-day PHI is specified. Do not apply more than 6.5 lb ai/A/season. Apply in a minimum of 10 gal/A of water using ground equipment or 5 gal/A using aerial equipment.
Broadcast foliar application Ground and aerial equipment		0.5 lb/A	5	7	
Broadcast pre-plant soil incorporated Ground equipment	14% G [100-469]	4 lb/A	1	NA	Do not apply more than 4 lb ai/A/season.
Cauliflower					
Broadcast pre-plant soil incorporated Ground and aerial equipment	50% WP [100-460] 4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	4 lb/A	1	NA	A 7-day PHI is specified. A maximum seasonal application rate is not specified. Apply in a minimum of 10 gal/A of water using ground equipment or 5 gal/A using aerial equipment.
Soil drench at transplanting		1.5 lb/A	1	NA	
Broadcast foliar application Ground and aerial equipment		0.5 lb/A	5	7	
Broadcast pre-plant soil incorporated Ground equipment	14% G [100-469]	4 lb/A	1	NA	Do not apply more than 4 lb ai/A/season.

(*continued; footnotes follow*)

Table A. Continued.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Max. Single Application Rate (ai)	Max. # Apps. [a]	Minimum Retreatment Interval (Days)	Use Limitations [b]
Celery					
Broadcast pre-plant soil incorporated Ground equipment	14% G [100-469]	4 lb/A	1	NA	Do not apply more than 4 lb ai/A/season.
Cherries					
Broadcast dormant application Ground equipment	50% WP [100-460]	2 lb/A	1	NA	A 21-day PHI is specified. Do not apply more than 6 lb ai/A/season. Apply in a minimum of 20 gal/A using either ground or aerial equipment. For dormant application, use 3 gallons of dormant oil or 1.5 gallons of superior type oil in 100 gallons of water to a maximum of 6 of oil gal/A.
Broadcast foliar application Ground or aerial equipment	50% WP [100-460] 4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	2 lb/A	3 or 4	7 or 10	
Chinese Broccoli					
Broadcast foliar application Ground and aerial equipment	50% WP [100-460] 4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	0.5 lb/A	5	7	A 10-day PHI is specified. Do not apply more than 2.5 lb ai/A/season. Apply in a minimum of 10 gal/A of water using ground equipment or 5 gal/A using aerial equipment.

(*continued; footnotes follow*)

Table A. Continued.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Max. Single Application Rate (ai)	Max. # Apps. [a]	Minimum Retreatment Interval (Days)	Use Limitations [b]
Chinese Cabbage (Bok Choy and Napa)					
Broadcast foliar application Ground and aerial equipment	50% WP [100-460] [CA810005] 4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	0.5 lb/A	5	7	A 10-day PHI is specified. Do not apply more than 2.5 lb ai/A/season. Apply in a minimum of 10 gal/A of water using ground equipment or 5 gal/A using aerial equipment. SLN No. CA810005: A 7-day PHI is specified. Apply in a minimum of 25 gal/A of water using ground equipment only. A maximum number of applications, a minimum retreatment interval, and a maximum use rate are not specified.
Chinese Mustard (Gai Choy)					
Broadcast foliar application Ground and aerial equipment	50% WP [100-460] 4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	0.5 lb/A	5	7	A 10-day PHI is specified. Do not apply more than 2.5 lb ai/A/season. Apply in a minimum of 10 gal/A of water using ground equipment or 5 gal/A using aerial equipment.
Chinese Radish (for use only in CA or FL)					
Broadcast foliar application Ground and aerial equipment	4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	0.5 lb/A	3	14	A 10-day PHI is specified. Do not apply more than 1.5 lb ai/A/season. For use in CA and FL only. Apply in a minimum of 10 gal/A of water using ground equipment or 5 gal/A using aerial equipment.

(*continued; footnotes follow*)

Table A. Continued.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Max. Single Application Rate (ai)	Max. # Apps. [a]	Minimum Retreatment Interval (Days)	Use Limitations [b]
Collards					
Broadcast pre-plant soil incorporated Ground and aerial equipment	50% WP [100-460] 4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	4 lb/A	1	NA	A 10-day PHI is specified. Do not apply more than 6.5 lb ai/A/season. Apply in a minimum of 10 gal/A of water using ground equipment or 5 gal/A using aerial equipment.
Broadcast foliar application Ground and aerial equipment		0.5 lb/A	5	7	
Broadcast pre-plant soil incorporated Ground equipment	14% G [100-469]	4 lb/A	1	NA	Do not apply more than 4 lb ai/A/season.
Corn, unspecified					
Seed treatment	50% WP [100-460]	1.5 oz/bushel	1	NA	Treat immediately prior to planting and do not store excess treated seed beyond planting time. Treated seed must not be used for or mixed with food or animal feed or processed for oil.

(*continued; footnotes follow*)

Table A. Continued.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Max. Single Application Rate (ai)	Max. # Apps. [a]	Minimum Retreatment Interval (Days)	Use Limitations [b]
Cranberries					
Broadcast foliar application Ground or aerial equipment	50% WP [100-460] 4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	2 or 3 lb/A	4 or 6	14	A 7-day PHI is specified. Do not apply more than 12 lb ai/A/season. Labels 100-460 and 100-461 specifies that applications are to be applied in a minimum of 15 gal/A for ground applications, 20 gal/A for aerial applications, and up to 400 gal/A for chemigation. Apply in a minimum of 15 or 5 gal/A using either ground or aerial equipment, respectively, on label 100-784. Ground applications include chemigation using sprinkler irrigation systems; no other type of irrigation systems are permitted.
Broadcast foliar application Ground equipment	14% G [NJ950010] [OR930006] [MA83000500]	3 lb/A	2	7	A 7-day PHI is specified. Do not apply more than 6 lb ai/A/season. Assure that granules fall into vines and are watered by sprinkler irrigation or rainfall. Do not apply using aerial equipment. MA83000500: Neither a maximum seasonal application rate nor a maximum number of applications are not specified.

(*continued; footnotes follow*)

Table A. Continued.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Max. Single Application Rate (ai)	Max. # Apps. [a]	Minimum Retreatment Interval (Days)	Use Limitations [b]
Cucumbers					
Broadcast pre-plant soil incorporated Ground and aerial equipment	50% WP [100-460] 4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	4 lb/A	1	NA	A 7-day PHI is specified. Do not apply more than 6.5 lb ai/A/season. Apply in a minimum of 5 gal/A of water using ground or aerial equipment.
Broadcast foliar application Ground and aerial equipment		0.5 lb/A	5	7	
Broadcast pre-plant soil incorporated Ground equipment	14% G [100-469]	4 lb/A	1	NA	Do not apply more than 4 lb ai/A/season.
Endive (Escarole)					
Broadcast pre-plant soil incorporated Ground and aerial equipment	50% WP [100-460] 4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	4 lb/A	1	NA	A 14-day PHI is specified. Do not apply more than 6.5 lb ai/A/season. Apply in a minimum of 10 gal/A of water using ground equipment or 5 gal/A using aerial equipment.
Broadcast foliar application Ground and aerial equipment		0.5 lb/A	5	7	
Broadcast pre-plant soil incorporated Ground equipment	14% G [100-469]	4 lb/A	1	NA	Do not apply more than 4 lb ai/A/season.

(*continued; footnotes follow*)

Table A. Continued.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Max. Single Application Rate (ai)	Max. # Apps. [a]	Minimum Retreatment Interval (Days)	Use Limitations [b]
Ginseng					
Broadcast foliar application Ground equipment	4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	0.5 lb/A	1	NA	A 30-day PHI is specified. Do not apply more than 0.5 lb ai/A/season. Apply in a minimum of 10 gal/A of water using ground equipment. Do not apply during flowering of 3 or 4 your old crops. Do not graze treated areas or feed treated forage to livestock.
Broadcast pre-plant soil incorporated Ground equipment	14% G [100-469]	4 lb/A	1	NA	Do not apply within 12 months of harvest. Do not apply more than 4 lb ai/A/season.
Grapes					
Broadcast foliar application Ground or aerial equipment	50% WP [100-460] 4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	1 lb/A	NS	7	A 28-day PHI is specified. Do not apply more than 5 lb ai/A/season. Apply in a minimum of 20 gal/A using either ground or aerial equipment.
Hops					
Broadcast foliar application Ground and aerial equipment	50% WP [100-460] 4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	1 lb/A	4	14	A 14-day PHI is specified. Do not apply more than 4 lb ai/A/season. Application volumes are not specified.

(*continued; footnotes follow*)

Table A. Continued.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Max. Single Application Rate (ai)	Max. # Apps. [a]	Minimum Retreatment Interval (Days)	Use Limitations [b]
Kale					
Broadcast pre-plant soil incorporated Ground and aerial equipment	50% WP [100-460] 4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	4 lb/A	1	NA	A 10-day PHI is specified. Do not apply more than 6.5 lb ai/A/season. Apply in a minimum of 10 gal/A of water using ground equipment or 5 gal/A using aerial equipment.
Broadcast foliar application Ground and aerial equipment		0.5 lb/A	5	7	
Broadcast pre-plant soil incorporated Ground equipment	14% G [100-469]	4 lb/A	1	NA	Do not apply more than 4 lb ai/A/season.
Lettuce					
Broadcast pre-plant soil incorporated Ground and aerial equipment	50% WP [100-460] 4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	4 lb/A	1	NA	A 14-day PHI is specified. Do not apply more than 6.5 lb ai/A/season. Apply in a minimum of 10 gal/A of water using ground equipment or 5 gal/A using aerial equipment.
Broadcast foliar application Ground and aerial equipment		0.5 lb/A	5	7	
Broadcast pre-plant soil incorporated Ground equipment	14% G [100-469]	4 lb/A	1	NA	Do not apply more than 4 lb ai/A/season.
Melons					
Broadcast pre-plant soil incorporated Ground and aerial equipment	50% WP [100-460] 4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	4 lb/A	1	NA	A 3-day PHI is specified. Do not apply more than 7.75 lb ai/A/season. Apply in a minimum of 5 gal/A of water using ground or aerial equipment.
Broadcast foliar application Ground and aerial equipment		0.75 lb/A	5	7	
Broadcast pre-plant soil incorporated Ground equipment	14% G [100-469]	4 lb/A	1	NA	Do not apply more than 4 lb ai/A/season.

(*continued; footnotes follow*)

Table A. Continued.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Max. Single Application Rate (ai)	Max. # Apps. [a]	Minimum Retreatment Interval (Days)	Use Limitations [b]
Mushroom houses					
Surface application to walls, floors, and sideboard of mushroom houses	50% WP [100-460]	5 lb in 50 gallons of water	3	NS	Do not spray directly on the compost.
Mustard					
Broadcast pre-plant soil incorporated Ground and aerial equipment	50% WP [100-460] 4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	4 lb/A	1	NA	A 10-day PHI is specified. Do not apply more than 6.5 lb ai/A/season. Apply in a minimum of 10 gal/A of water using ground equipment or 5 gal/A using aerial equipment.
Broadcast foliar application Ground and aerial equipment		0.5 lb/A	5	7	
Broadcast pre-plant soil incorporated Ground equipment	14% G [100-469]	1 lb/A	1	NA	Do not apply more than 1 lb ai/A/season.
Nectarines					
Broadcast foliar or dormant application Ground and aerial equipment	50% WP [100-460]	2 lb/A	NS	7	A 21-day PHI is specified. Do not apply more than 6 lb ai/A/season. Apply in a minimum of 20 gal/A of water using either ground or aerial equipment. For dormant application, apply in up to 3 gallons of dormant oil or 1.5 gallons of superior type oil per 100 gallons of water to a maximum of 6 gal/A of oil. For foliar applications, may be applied in 1.5 gal/A of oil per 100 gallons of water to a maximum of 4 gal/A.
Broadcast foliar application Ground or aerial equipment	4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	2 lb/A	NS	14	A 21-day PHI is specified. Do not apply more than 6 lb ai/A/season. Apply in a minimum of 20 gal/A using either ground or aerial equipment.

(*continued; footnotes follow*)

Table A. Continued.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Max. Single Application Rate (ai)	Max. # Apps. [a]	Minimum Retreatment Interval (Days)	Use Limitations [b]
Onions (bulb and green)					
Broadcast pre-plant soil incorporated Ground and aerial equipment	50% WP [100-460] 4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	4 lb/A	1	NA	A 14-day PHI is specified. Do not apply more than 5.5 lb ai/A/season. Apply in a minimum of 10 gal/A of water using ground equipment or 5 gal/A using aerial equipment.
Broadcast foliar application Ground and aerial equipment		0.5 lb/A	3	7	
Broadcast pre-plant soil incorporated Ground equipment	14% G [100-469]	4 lb/A	1	NA	Do not apply more than 4 lb ai/A/season.
Parsley					
Broadcast pre-plant soil incorporated Ground and aerial equipment	50% WP [100-460] 4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	4 lb/A	1	NA	Do not apply more than 4 lb ai/A/season. Apply in a minimum of 10 gal/A of water using ground equipment or 5 gal/A using aerial equipment.
Broadcast pre-plant soil incorporated Ground equipment	14% G [100-469]	4 lb/A	1	NA	Do not apply more than 4 lb ai/A/season.
Parsnips					
Broadcast foliar application Ground and aerial equipment	50% WP [100-460] 4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	0.5 lb/A	5	7	A 14-day PHI is specified. Do not apply more than 2.5 lb ai/A/season. Apply in a minimum of 10 gal/A of water using ground equipment or 5 gal/A using aerial equipment.

(*continued; footnotes follow*)

Table A. Continued.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Max. Single Application Rate (ai)	Max. # Apps. [a]	Minimum Retreatment Interval (Days)	Use Limitations [b]
Peaches					
Broadcast foliar or dormant application Ground or aerial equipment	50% WP [100-460]	2 lb/A	NS	7	A 21-day PHI is specified. Do not apply more than 6 lb ai/A/season. Apply in a minimum of 20 gal/A of water using either ground or aerial equipment. For dormant application, apply in up to 3 gallons of dormant oil or 1.5 gallons of superior type oil per 100 gallons of water to a maximum of 6 gal/A of oil. For foliar applications, may be applied in 1.5 gal/A of oil per 100 gallons of water to a maximum of 4 gal/A.
Broadcast foliar application Ground or aerial equipment	4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	2 lb/A	NS	7	A 21-day PHI is specified. Do not apply more than 6 lb ai/A/season. Apply in a minimum of 20 gal/A using either ground or aerial equipment.
Pears					
Broadcast dormant or foliar application Ground or aerial equipment	50% WP [100-460]	2 lb/A	NA	14	A 21-day PHI is specified. Do not apply more than 6 lb ai/A/season. Apply in a minimum of 20 gal/A of water using either ground or aerial equipment. For dormant applications only, 3 gallons of dormant oil or 1-1.5 gallons of superior type oil may be added for each 100 gallons of water used to a maximum of 6 gallons of oil/A.

(*continued; footnotes follow*)

Table A. Continued.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Max. Single Application Rate (ai)	Max. # Apps. [a]	Minimum Retreatment Interval (Days)	Use Limitations [b]
Peas (succulent only)					
Broadcast pre-plant soil incorporated Ground and aerial equipment	50% WP [100-460] 4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	4 lb/A	1	NA	A 7-day PHI is specified. Do not apply more than 5.5 lb ai/A/season. Apply in a minimum of 10 gal/A of water using ground equipment or 5 gal/A using aerial equipment. Vines and hay may be fed to dairy and beef cattle and sheep; a 7-day PHI is specified if forage is to be cut for hay.
Broadcast foliar application Ground and aerial equipment		0.5 lb/A	3	5	
Broadcast pre-plant soil incorporated Ground equipment	14% G [100-469]	4 lb/A	1	NA	Do not apply more than 4 lb ai/A/season.
Seed treatment	50% WP [100-460]	0.25 oz/bushel	1	NA	Treat immediately prior to planting and do not store excess treated seed beyond planting time. Treated seed must not be used for or mixed with food or animal feed or processed for oil.

(*continued; footnotes follow*)

Table A. Continued.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Max. Single Application Rate (ai)	Max. # Apps. [a]	Minimum Retreatment Interval (Days)	Use Limitations [b]
Peppers					
Broadcast pre-plant soil incorporated Ground and aerial equipment	50% WP [100-460]	4 lb/A	1	NA	A 5-day PHI is specified. Do not apply more than 5.3 lb ai/A/season. Apply in a minimum of 10 gal/A of water using ground equipment or 5 gal/A using aerial equipment.
Broadcast foliar application Ground and aerial equipment		0.25 lb/A	5	7	
Broadcast pre-plant soil incorporated Ground and aerial equipment	4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	4 lb/A	1	NA	A 5-day PHI is specified. Do not apply more than 6.5 lb ai/A/season. Apply in a minimum of 10 gal/A of water using ground equipment or 5 gal/A using aerial equipment.
Broadcast foliar application Ground and aerial equipment		0.5 lb/A	5	7	
Broadcast pre-plant soil incorporated Ground equipment	14% G [100-469]	4 lb/A	1	NA	Do not apply more than 4 lb ai/A/season.
Pineapples					
Broadcast foliar application Ground or aerial equipment	50% WP [100-460]	1 lb/A	8	28	A 7-day PHI is specified. Do not apply more than 8 lb ai/A/season. Apply in a minimum of 20 or 200 gal/A using aerial or ground equipment, respectively.

(*continued; footnotes follow*)

Table A. Continued.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Max. Single Application Rate (ai)	Max. # Apps. [a]	Minimum Retreatment Interval (Days)	Use Limitations [b]
Plums					
Broadcast dormant or foliar application Ground or aerial equipment	50% WP [100-460]	2 lb/A	NS	7	A 21-day PHI is specified. Do not apply more than 6 lb ai/A/season. Apply in a minimum of 20 gal/A of water using either ground or aerial equipment. For dormant applications only, 3 gallons of dormant oil or 1-1.5 gallons of superior type oil may be added for each 100 gallons of water used to a maximum of 6 gallons of oil/A.
Broadcast foliar application Ground or aerial equipment	4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	2 lb/A	NS	7	A 21-day PHI is specified. Do not apply more than 6 lb ai/A/season. Apply in a minimum of 20 gal/A using either ground or aerial equipment.
Potatoes					
Broadcast pre-plant soil incorporated Ground and aerial equipment	50% WP [100-460] 4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	4 lb/A	1	NA	A 35-day PHI is specified. Do not apply more than 6.5 lb ai/A/season. Apply in a minimum of 10 gal/A of water using ground equipment or 5 gal/A using aerial equipment. Do not use on commercially grown potatoes which will be hand-harvested.
Broadcast foliar application Ground and aerial equipment		0.5 lb/A	5	7	
Broadcast pre-plant soil incorporated Ground equipment	14% G [100-469]	4 lb/A	1	NA	Do not apply more than 4 lb ai/A/season.

(*continued; footnotes follow*)

Table A. Continued.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Max. Single Application Rate (ai)	Max. # Apps. [a]	Minimum Retreatment Interval (Days)	Use Limitations [b]
Prunes					
Broadcast dormant or foliar application Ground or aerial equipment	50% WP [100-460]	2 lb/A	NS	7	A 21-day PHI is specified. Do not apply more than 6 lb ai/A/season. Apply in a minimum of 20 gal/A of water using either ground or aerial equipment. For dormant applications only, 3 gallons of dormant oil or 1.5 gallons of superior type oil may be added for each 100 gallons of water used to a maximum of 6 gallons of oil/A.
Broadcast foliar application Ground or aerial equipment	4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	2 lb/A	NS	7	A 21-day PHI is specified. Do not apply more than 6 lb ai/A/season. Apply in a minimum of 20 gal/A using either ground or aerial equipment.
Radishes					
Broadcast pre-plant soil incorporated Ground and aerial equipment	50% WP [100-460] 4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	4 lb/A	1	NA	A 14-day PHI is specified. Do not apply more than 5.5 lb ai/A/season. Apply in a minimum of 10 gal/A of water using ground equipment or 5 gal/A using aerial equipment.
Broadcast foliar application Ground and aerial equipment		0.5 lb/A	3	7	
Broadcast pre-plant soil incorporated Ground equipment	14% G [100-469]	4 lb/A	1	NA	Do not apply more than 4 lb ai/A/season.

(*continued; footnotes follow*)

Table A. Continued.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Max. Single Application Rate (ai)	Max. # Apps. [a]	Minimum Retreatment Interval (Days)	Use Limitations [b]
Rutabagas					
Broadcast pre-plant soil incorporated Ground and aerial equipment	4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	4 lb/A	1	NA	A 14-day PHI is specified. Do not apply more than 6.5 lb ai/A/season. Apply in a minimum of 10 gal/A of water using ground equipment or 5 gal/A using aerial equipment.
Broadcast foliar application Ground and aerial equipment		0.5 lb/A	5	7	
Broadcast pre-plant soil incorporated Ground equipment	14% G [100-469]	4 lb/A	1	NA	Do not apply more than 4 lb ai/A/season.
Spinach					
Broadcast foliar application Ground and aerial equipment	50% WP [100-460]	0.5 lb/A	5	7	A 14-day PHI is specified. Do not apply more than 2.5 lb ai/A/season. Apply in a minimum of 10 gal/A of water using ground equipment or 5 gal/A using aerial equipment.
Broadcast pre-plant soil incorporated Ground and aerial equipment	4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	4 lb/A	1	NA	A 14-day PHI is specified. Do not apply more than 6.5 lb ai/A/season. Apply in a minimum of 10 gal/A of water using ground equipment or 5 gal/A using aerial equipment.
Broadcast foliar application Ground and aerial equipment		0.5 lb/A	5	7	
Broadcast pre-plant soil incorporated Ground equipment	14% G [100-469]	4 lb/A	1	NA	Do not apply more than 4 lb ai/A/season.

(*continued; footnotes follow*)

Table A. Continued.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Max. Single Application Rate (ai)	Max. # Apps. [a]	Minimum Retreatment Interval (Days)	Use Limitations [b]
Squash, Summer					
Broadcast pre-plant soil incorporated Ground and aerial equipment	50% WP [100-460] 4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	4 lb/A	1	NA	A 7-day PHI is specified. Do not apply more than 7.75 lb ai/A/season. Apply in a minimum of 5 gal/A of water using ground or aerial equipment.
Broadcast foliar application Ground and aerial equipment		0.75 lb/A	5	7	
Broadcast pre-plant soil incorporated Ground equipment	14% G [100-469]	4 lb/A	1	NA	Do not apply more than 4 lb ai/A/season.
Squash, Winter					
Broadcast pre-plant soil incorporated Ground and aerial equipment	4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	4 lb/A	1	NA	A 3-day PHI is specified. Do not apply more than 7.75 lb ai/A/season. Apply in a minimum of 5 gal/A of water using ground or aerial equipment.
Broadcast foliar application Ground and aerial equipment		0.75 lb/A	5	7	
Broadcast pre-plant soil incorporated Ground equipment	14% G [100-469]	4 lb/A	1	NA	Do not apply more than 4 lb ai/A/season.
Strawberries					
Broadcast pre-plant soil incorporated Ground or aerial equipment	50% WP [100-460] 4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	1 lb/A	1	NA	A 5-day PHI is specified. Do not apply more than 4 lb ai/A/season. Apply in a minimum of 20 gal/A using either ground or aerial equipment.
Broadcast foliar application Ground or aerial equipment		1 lb/A	3	7	

(*continued; footnotes follow*)

Table A. Continued.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Max. Single Application Rate (ai)	Max. # Apps. [a]	Minimum Retreatment Interval (Days)	Use Limitations [b]
Sugar Beets					
Broadcast pre-plant soil incorporated Ground and aerial equipment	50% WP [100-460] 4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	4 lb/A	1	NA	A 14-day PHI is specified. Do not apply more than 6.5 lb ai/A/season. Minimum application volumes are not specified. Sugar beet tops may be fed to beef and dairy animals.
Broadcast foliar application Ground and aerial equipment		0.5 lb/A	5	7	
Broadcast or banded pre-plant soil incorporated Ground equipment	14% G [100-469]	4 lb/A	1	NA	Do not apply more than 4 lb ai/A/season. For banded applications, apply in a 5 to 7-inch band.
Sweet Corn					
Broadcast pre-plant soil incorporated Ground and aerial equipment	50% WP [100-460] 4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	4 lb/A	1	NA	A 7-day PHI is specified. Do not apply more than 10.25 lb ai/A/season. Apply in a minimum of 20 gal/A of water using ground equipment or 5 gal/A using aerial equipment. Forage may be fed to beef and dairy cattle and sheep with a 7-day pregrazing interval.
Broadcast foliar application Ground and aerial equipment		1.25 lb/A	5	7	
Broadcast pre-plant soil incorporated Ground equipment	14% G [100-469]	4 lb/A	1	NA	Do not apply more than 4 lb ai/A/season.

(*continued; footnotes follow*)

Table A. Continued.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Max. Single Application Rate (ai)	Max. # Apps. [a]	Minimum Retreatment Interval (Days)	Use Limitations [b]
Sweet Potatoes					
Broadcast pre-plant soil incorporated Ground and aerial equipment	50% WP [100-460] 4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	4 lb/A	1	NA	Do not apply more than 4 lb ai/A/season. Apply in a minimum of 10 gal/A of water using ground equipment or 5 gal/A using aerial equipment.
Broadcast pre-plant soil incorporated Ground equipment	14% G [100-469]	3 lb/A	1	NA	Do not apply more than 3 lb ai/A/season.
Swiss Chard					
Broadcast pre-plant soil incorporated Ground and aerial equipment	50% WP [100-460] 4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	4 lb/A	1	NA	A 14-day PHI is specified. Do not apply more than 6.5 lb ai/A/season. Apply in a minimum of 10 gal/A of water using ground equipment or 5 gal/A using aerial equipment.
Broadcast foliar application Ground and aerial equipment		0.5 lb/A	5	7	
Broadcast pre-plant soil incorporated Ground equipment	14% G [100-469]	4 lb/A	1	NA	Do not apply more than 4 lb ai/A/season.
Tomatoes					
Broadcast pre-plant soil incorporated Ground and aerial equipment	50% WP [100-460] 4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	4 lb/A	1	NA	A 1-day PHI is specified. Do not apply more than 7.75 lb ai/A/season. Apply in a minimum of 10 gal/A of water using ground equipment or 5 gal/A using aerial equipment.
Broadcast foliar application Ground and aerial equipment		0.75 lb/A	5	7	
Broadcast pre-plant soil incorporated Ground equipment	14% G [100-469]	4 lb/A	1	NA	Do not apply more than 4 lb ai/A/season.

(*continued; footnotes follow*)

Table A. Continued.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Max. Single Application Rate (ai)	Max. # Apps. [a]	Minimum Retreatment Interval (Days)	Use Limitations [b]
Turnips, Roots and Tops					
Broadcast pre-plant soil incorporated Ground and aerial equipment	50% WP [100-460] 4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	4 lb/A	1	NA	A 14-day PHI is specified. Do not apply more than 6.5 lb ai/A/season. Apply in a minimum of 10 gal/A of water using ground equipment or 5 gal/A using aerial equipment.
Broadcast foliar application Ground and aerial equipment		0.5 lb/A	5	7	
Broadcast pre-plant soil incorporated Ground equipment	14% G [100-469]	4 lb/A	1	NA	Do not apply more than 4 lb ai/A/season.
Walnuts (only in CA)					
Broadcast foliar application Ground or aerial equipment	50% WP [100-460] 4 lb/gal EC [100-461] 4.5 lb/gal SCl [100-784]	3 lb/A	3	14	A 45-day PHI is specified. Do not apply more than 9 lb ai/A/season. Label 100-460 specifies a minimum application volume of 20 gal/A using either ground or aerial equipment. Labels 100-461 and 100-764 indicate minimum application volumes of 20 and 100 gal/A for both ground and aerial equipment.

(*continued; footnotes follow*)

Table A. Continued.

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Max. Single Application Rate (ai)	Max. # Apps. [a]	Minimum Retreatment Interval (Days)	Use Limitations [b]
Food Handling Establishments					
Limited spot treatments	2% D [100-445]	NS	NS	NS	Apply dust directly for limited spot and crack and crevice treatments. Limit the sum of the individual spot treatments to an area no larger than 20% of the floor surface area. Any individual spot treatment must not exceed 2 square feet.
Crack and crevice treatments		NS	NS	NS	
Limited spot treatments	4 lb/gal EC [100-463] 2 lb/gal EC [100-649] 0.4 lb/gal EC [100-687] 4.5 lb/gal SCl [100-785]	0.5-1% solution	NS	NS	Limit the sum of the individual spot treatments to an area no larger than 20% of the floor surface area. Any individual spot treatment must not exceed 2 square feet.
Crack and crevice treatments		0.5-1% solution	NS	NS	
Livestock Uses					
Dermal application by high or low pressure spray or by sprinkler can	50% WP [100-460]	0.0025 lb/animal	NS	NS	A 14-day PSI is specified. For dermal applications use a minimum of 1 quart per animal. For surface applications livestock housings, apply to runoff. Do not use in poultry houses, dairy barns, or milk rooms.
Surface application to building walls and ceilings		0.0001 lb/ft^2	NS	NS	

[a] Maximum number of applications at the maximum single application rate.

[b] Labels 100-460, 100-461, 100-469, and 100-784 indicate that applications cannot be made to food crops grown in greenhouses. Labels 100-461 and 100-784 specify that applications cannot be made on livestock or in barns or dwellings.

[c] Label 100-469 specifies a 12-hour reentry interval (REI). Labels 100-460, 100-461 and 100-784 indicate a 24-hour REI with the following exceptions: a 5-day REI is specified for applications made in CA on grapes, peaches, and nectarines; if 2 or more organophosphates are applied in combination, the REI should be the largest REI plus an additional 50% of that interval.